BARRY COUNTY COMMUNITY HEALTH ASSESSMENT

2021-2022

This Assessment is provided by the Barry-Eaton District Health Department and Spectrum Health Pennock.

Barry-Eaton District Health Department

Our Mission

To protect and enhance health by promoting and providing innovative, community-based programs and initiatives.

Our Vision

A community where everyone has the opportunity to live a long, healthy and active life.

Our Values

We are committed to helping people.

We will treat people with dignity and respect.

We will ensure good health and wellness.

We will fulfill the essential public health functions.

Spectrum Health

Mission

Improve health, instill humanity and inspire hope.

Vision

A future where health is simple, affordable, equitable and exceptional.

Values

Compassion. Colaboration. Clarity. Curiosity. Courage.

Purpose

This report was created to evaluate and describe the health status of the residents of Barry County. This includes key health behaviors, the social determinants of health, and analysis of root causes of poor health as well as health inequity. A health assessment and subsequent improvement plan is structured as a collaborative, structured process that collects and analyzes relevant data. It can also foster community engagement, develop priorities, reveal community resources and contribute to community health improvement planning.

Acknowledgments

Many organizations and agencies contributed their time and efforts to assist with the 2021-2022 Community Health Assessment. Without them, this Assessment would not have been possible. We acknowledge and are grateful for the contributions of community members who participated in our focus group interviews and the following organizations and agencies that made this assessment project possible:

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Data Collection Support

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Barry County Chamber of Commerce

Barry County United Way

This project was made possible by financial contributions from Spectrum Health and Barry-Eaton District Health Department as well as the time and effort from both parties to make this the best Community Health Assessment possible.

Report Publication

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Your feedback on this report or its contents is welcomed.

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Publication Date:

November 7, 2022

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Executive Summary

Introduction

The 2021-2022 Barry County Community Health Assessment was collaboratively planned and developed by the Barry-Eaton District Health Department, Spectrum Health Pennock, Spectrum Health Healthier Communities with additional input sought directly from the Barry County community. This process and report were designed to be a collaborative effort from all parties to make the most well-rounded assessment possible and to best identify the needs and priorities of the community.

We defined our community as the county lines where the Barry-Eaton District Health department has jurisdiction: Barry County. Data and other information presented in this report will be reflective of those who live and work in the county.

Community engagement is an essential piece when conducting a thorough Community Health Assessment. Consistent engagement from stakeholders within Barry County throughout the entire process positively impacted the overall quality of both the process and findings. Spectrum Health and the Barry-Eaton District Health Department jointly started and coordinated the 2021-2022 Community Health Assessment project. This was the first cycle in which close collaboration occurred between these two organizations for the duration of the project.

To assess health status in Barry County, demographic, socioeconomic, health behavior and health outcomes information for the Community Health Assessment was obtained from publicly available secondary data sources. To gather feedback directly from the people of Barry County, three surveys, one leadership focus group, and several community focus group interviews were conducted to provide additional context along with the secondary data sources.

After the data were collected and shared with the community, five significant health needs were prioritized and all were included in this final report.

Top 5 Community Priorities for 2021-2023

1. ***Mental Health Needs and Access***
2. ***Safe and Affordable Housing***
3. ***Health Care Access and Quality***
4. ***Substance Misuse***
5. ***Social Connection and Capital***

Mental Health Needs and Access

Mental health is a state of well-being in which individuals realize their abilities, can cope with the everyday stresses of life, can work productively, and can contribute to their community. Both providers and community members identified access to mental health or behavioral health services as a key factor that defines a healthy community. Nearly one-third of community members surveyed identified that affordable access to behavioral health care was a problem impacting their community. There is only one mental health provider for every 821 residents, and nearly a quarter of adults ages 18 to 24 and 45 to 54 rated their mental health as “poor.”

Safe and Affordable Housing

We consider affordable housing to be living quarters that a household spends 30% or less of its income on. One-in-five community members surveyed identified affordable housing as a factor defining a healthy community. Between 2015 and 2019, 17.1% of households in Barry County spent more than 30% of their income on housing, which was much lower than Michigan overall (26.8%). Safe housing is another important aspect of housing which reflects the conditions residents are living in. If housing is affordable, but not safe and conducive to good health, that is also a signficant barrier that keeps residents from thriving.

Health Care Access and Quality

Health care is defined as the use of health services to help live a thriving and fulfilling life. Having regular access to a primary care provider, dentist, and vision care can lead to better health outcomes. Improving easy access to health care resources may improve quality of care, emphasize prevention focused interventions, and aid in the identification and early management of new diagnoses or chronic conditions. Respondents to our community and provider surveys identified access to and having affordable health care as a factor that defines a healthy community. Almost one-third of the community members surveyed responded that access to affordable health care is a problem in their community. Approximately two out of every ten adults reported having no primary care provider, and one out of 10 reported that they could not see a doctor or dentist when needed due to costs at some point during the past 12 months.

Substance Misuse

Substance misuse is defined as the use of illegal drugs and the inappropriate use of legal or prescription substances such as alcohol, tobacco, and opioids. Substance use disorder is strongly associated with poor health outcomes and premature death. Nearly one-third of the community members surveyed identified that alcohol and drug issues negatively impact their community. One out of 10 adults in Barry County reported using marijuana during the past 30 days. Approximately two out of every ten adults reported to have either binged or drank heavily during the past 30 days.

Social Connection and Capital

Social connection and capital is how strongly residents feel they are connected to their community. People with an increased sense of security, belonging and trust in their community tend to have better health. People who do not feel connected to their community or other support structures may be less likely to act in healthy ways or work with others to promote well-being for all. During the 2017-2018 school year, 58.8% of middle school students and 53.5% of high school students reported knowing an adult other than their parents they could talk to about something important in their neighborhood.

Final Thoughts

The Barry County Community Health Assessment was conducted with Spectrum Health and BEDHD's mission, vision and values as our guiding principles. Our mission is to protect and improve the health of Barry County through education, promotion of healthy lifestyles, implementation of effective policies and programs for individuals, families, businesses, and communities.

Throughout the Community Health Assessment process, the team was driven by our values of compassion, collaboration, curiosity and courage to understand the health status and needs in Barry County. Ultimately, our vision is to make sure the residents of Barry County have access to the resources they need to be active, safe and healthy.

Introduction

For this project, we used two definitions of what we consider health to mean. The most widely used definition of health is strictly related to the absence of disease or illness. On the other hand, the World Health Organization (WHO) created a different definition of health: **"a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity."**[1] The WHO's definition views health as a holistic approach, which includes, but is not limited to, an individual's physical, mental, social, emotional, and environmental well-being.

> "It has long been recognized that the health of a community has a tremendous impact on the function of its social systems and that the condition of the social and economic systems has a significant impact on the health of all who live in a community."
>
> **—Donald L. Patrick and Thomas M. Wickizer, 1995**[2]

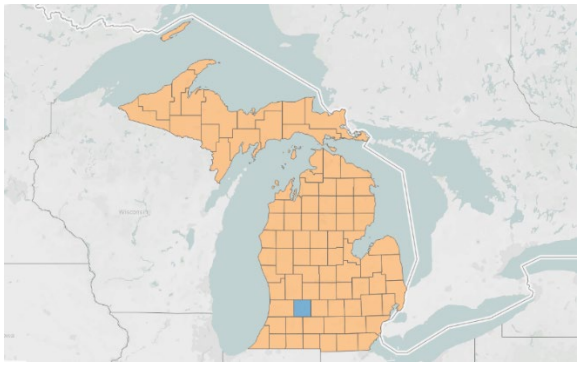
The WHO's definition can also be applied to the communities where people live, work and play. Communities that have excellent physical, mental and psychosocial health tend to be communities that are vibrant, thriving and cohesive.

The Community Health Assessment uses a systematic approach to better identify, understand and prioritize the community's health needs in the Barry County area. The CHA report will define health using the broader, holistic definition.

Our Community

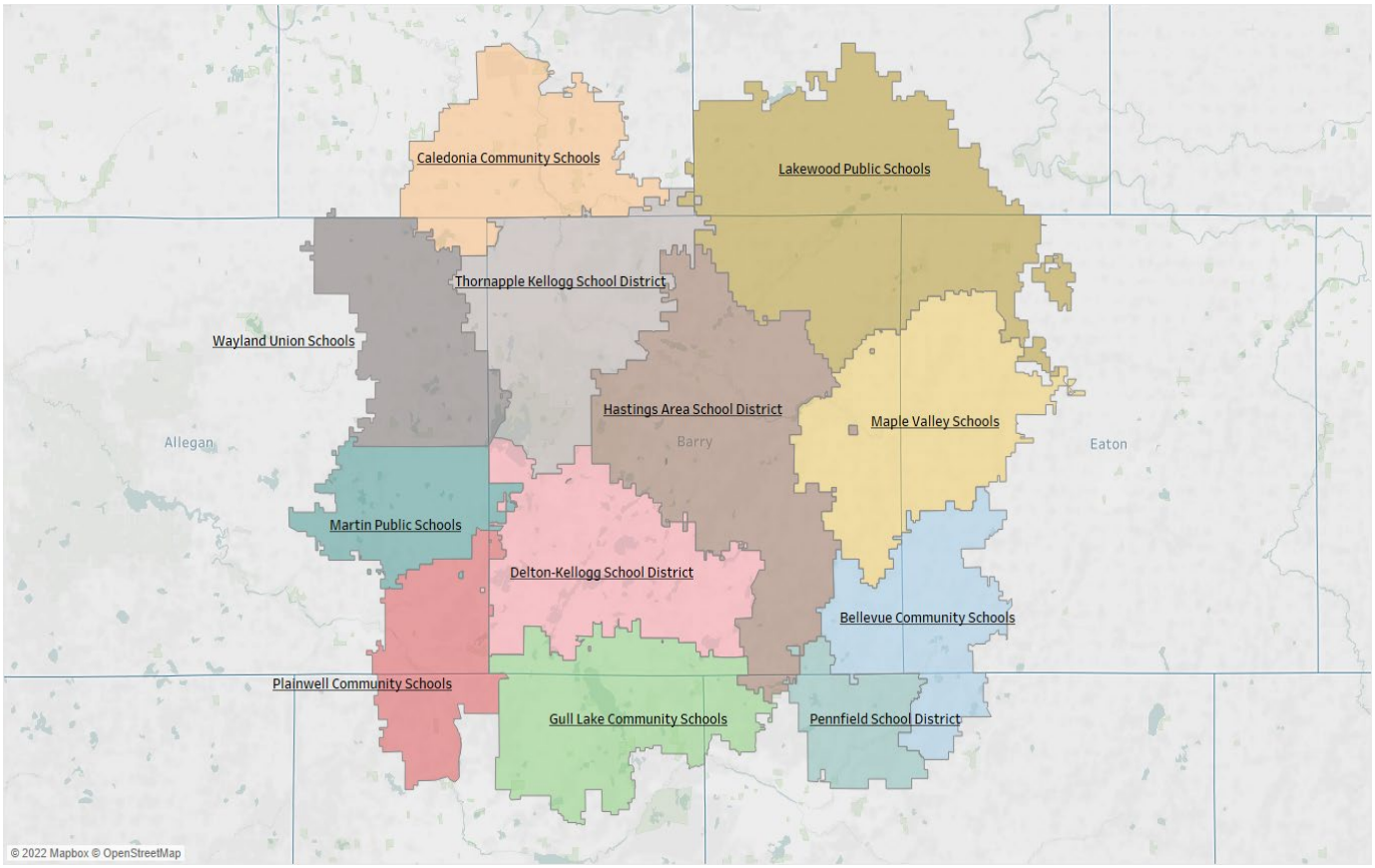
For this assessment, we consider "community" to be the area where BEDHD has jurisdiction: Barry County, Michigan. The data and information presented in this report reflect the population living and working in the county.

Figure 1: Location of Barry County, Michigan



Barry County is a rural county located in the Southwest of Michigan's Lower Peninsula and covers 577 square miles, of which 533 square miles are land area (Figure 1).[3] There are an estimated 60,540 residents (113.6 people per square mile of land), making it the 32nd-most-populous county out of the 83 counties in Michigan.[4] Barry County consists of one city, 16 townships and four villages.[5] Hastings is the largest city in Barry County, with an estimated population of 7,311. There are 13 K-12 public school districts and one community college in Barry County (Figure 2).[6,7]

Figure 2: Barry County Public School Districts



Not Shown: Barry ISD. Barry ISD covers the entire Barry County area.

Partnership

The partnership between Spectrum Health, Spectrum Health Pennock, and Barry-Eaton District Health Department initiated and supported the management of the 2021-2022 Community Health Needs Assessment project. Community engagement was key in conducting the Assessment. Without community engagement, we would have an incomplete picture of the current state of health for our residents. Input from key stakeholders within Barry County also increased the quality of both the overall process and findings. The 2021-2022 Community Health Assessment was the first cycle in which close collaboration occurred between these two partners whereas previous cycles were driven primarily by a third-party consultant and more limited involvement from both Spectrum Health and the Barry-Eaton District Health Department.

Barry-Eaton District Health Department

Barry-Eaton District Health Department (BEDHD) is a quasi-governmental entity governed by a Board of Health (board members consist of elected county commissioners) from both Barry and Eaton counties. The health department and its Board of Health are tasked with preventing disease, prolonging life and promoting public health in the two counties.

Our offices can be found at:

Barry County
330 West Woodlawn Avenue
Hastings, Michigan 49058
Phone: 269-945-9516
Fax: 269-945-2413

Eaton County
1033 Health Care Drive
Charlotte, Michigan 48813
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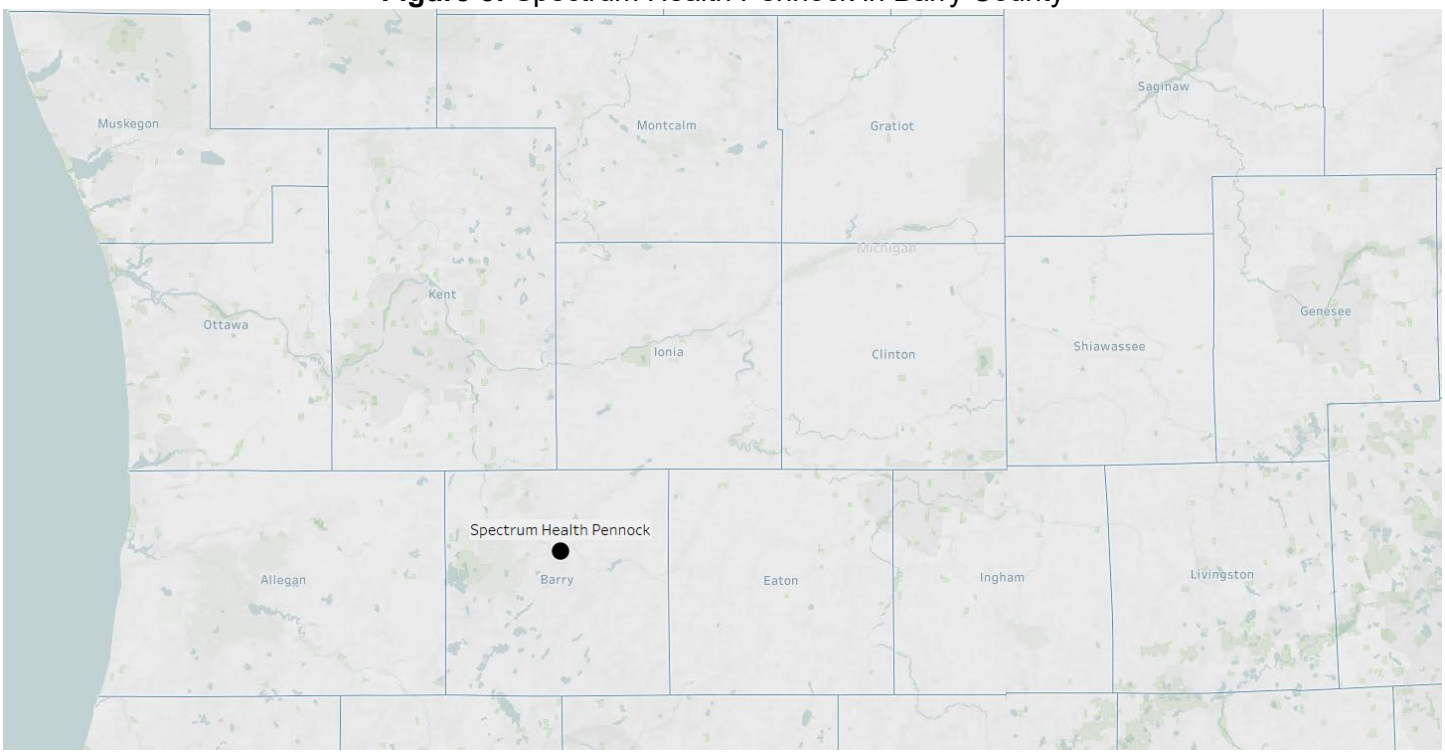
Spectrum Health

Spectrum Health is a not-for-profit health system that provides care and coverage, comprising 31,000+ team members, 14 hospitals (including Helen DeVos Children's Hospital), a robust network of care facilities, teams of nationally recognized doctors and providers, and the nation's third-largest provider-sponsored health plan, Priority Health, currently serving over 1 million members across the state of Michigan.

Spectrum Health Pennock

Spectrum Health Pennock is a 49-bed community hospital in Hastings, located conveniently near Grand Rapids, Kalamazoo and Lansing (Figure 3). Pennock offers traditional acute care and outpatient care, as well as family, internal and pediatric medicine offices, obstetrics and gynecology clinics, family birthing center, general surgery and orthopedics, a health and wellness center, pharmacy, and a retirement village.[8]

Figure 3: Spectrum Health Pennock in Barry County



Common Definitions

Community Health Improvement Process

A comprehensive approach to assessing community health and developing and implementing action plans to improve community health through substantive community member and local public health system partner engagement. The community health improvement process yields two distinct yet connected deliverables: a community health assessment, presented in the form of a community health profile, and a community health improvement plan.

Community Health Assessment (CHA)

A process that engages with community members and partners to systematically collect and analyze qualitative and quantitative health-related data from a variety of sources within a specific community. The findings of the CHA are presented in the form of a community health profile and inform community decision-making, the prioritization of health problems, and the development and implementation of community health improvement plans.

Community Health Improvement Plan (CHIP)

An action-oriented plan outlining the priority community health issues (based on the community health assessment findings and community member and partner input) and how these issues will be addressed, including strategies and measures, to ultimately improve the health of a community. The CHIP is developed through the community health improvement process.

Barry County Demographics

Sex and Age

As of 2018, there were more males in Barry County than females (101.3 males per 100 females) compared to Michigan (96.9 males per 100 females). The county's median age in years (42.5) was slightly higher than the state overall (39.7). The percentage of residents aged 45 and older was also higher in Barry County compared to Michigan. (Table 1).[4]

Table 1: ***Barry County and Michigan Demographics – Sex and Age***

	Barry County		Michigan	
	#	%	#	%
SEX				
Females	30,076	49.7	5,060,025	50.8
Males	30,464	50.3	4,905,240	49.2
Sex ratio (# of males/100 females)	101.3		96.9	
AGE				
Under 5 Years	3,357	5.5	57,1094	5.7
5 to 9 Years	3,666	6.1	591,065	5.9
10 to 14 Years	3,941	6.5	623,334	6.3
15 to 19 Years	3,864	6.4	661,499	6.6
20 to 24 Years	3,355	5.5	704,793	7.1
25 to 34 Years	6,683	11.0	1,267,775	12.7
35 to 44 Years	7,002	11.6	1,165,370	11.7
45 to 54 Years	8,304	13.7	1,317,258	13.2
55 to 59 Years	4,626	7.6	718,008	7.2
60 to 64 Years	4,825	8.0	678,726	6.8
65 to 74 Years	6,546	10.8	975,417	9.8
75 Years and Older	4,371	7.2	690,926	7.0
Median Age (Years)	42.5		39.7	

Source: *U.S. Census Bureau: 2019 American Community Survey 5-Year Estimates, Table DP05*

Race, Ethnicity, Nationality and Language Spoken at Home

The racial and ethnic profile of Barry County is relatively homogeneous, with non-Hispanic White residents making up approximately 94% of the population in 2019.[9] Hispanic and non-Hispanic multiracial residents follow at a distance, making up 3.0% and 1.3% of the population, respectively.[4]

Nearly all (98.3%) of the residents of Barry County are native-born United States citizens. English was the only language spoken at home in the vast majority of households (97.5%) (Table 2).[10]

Table 2: ***Barry County and Michigan Race, Ethnicity, Nationality and Language Spoken at Home***

	Barry County		Michigan	
	#	%	#	%
RACE & ETHNICITY				
White	56,987	94.1	7,477,400	75.0
Black or African American	306	0.5	1,358,034	13.6
Hispanic	1,786	3.0	507,353	5.1
Native American or Alaska Native	4	0.0	45,569	0.5
Asian	364	0.6	310,420	3.1
Multiracial	785	1.3	250,188	2.5
Native Hawaiian and other Pacific Islander	4	0.0	2,649	0.0
NATIONALITY				
Native-born	59,540	98.3	9,281,068	93.1
Foreign-born	1,000	1.7	684,197	6.9
LANGUAGE SPOKEN AT HOME				
English Only	55,750	97.5	8,480,376	90.3
Other Language	1,433	2.5	913,795	9.7

Source: *U.S. Census Bureau: 2019 American Community Survey 5-Year Estimates, Tables DP02 and DP05*

School Enrollment

13,471 children under the age of 18 resided in Barry County as of 2019.[4] Among children above the age of 3, 6.8% attend preschool or kindergarten, nearly half were in primary school, and one-quarter were in high school (Table 3).[10]

Table 3: ***Barry County and Michigan School Enrollment***

	Barry County		Michigan	
	#	%	#	%
SCHOOL ENROLLMENT				
Nursery School, Preschool	881	6.8	143,145	5.8
Kindergarten	594	4.6	119,635	4.9
Elementary and Middle School	6,328	48.8	965,649	39.4
High School	3,178	24.5	529,043	21.6
College, Undergraduate and Graduate	1,993	15.4	693,876	28.3

Source: *U.S. Census Bureau: 2019 American Community Survey 5-Year Estimates, Table DP02*

Household Income

The median household income in Barry County was higher than the state median in 2019 ($64,490 and $57,144 respectively).[11] The percentage of county residents who lived below the federal poverty level was lower than that of the state in 2019 (7.7% and 13.4% respectively) (Table 4).[12]

Table 4*: Barry County and Michigan Household Income*

	Barry County		Michigan	
	#	%	#	%
HOUSEHOLD INCOME				
Less Than $10,000	923	3.8	260,286	6.6
$10,000 to $14,999	709	2.9	172,478	4.4
$15,000 to $24,999	2,026	8.3	379,660	9.6
$25,000 to $34,999	1,945	8.0	386,973	9.8
$35,000 to $49,999	3,390	14.0	531,149	13.5
$50,000 to $74,999	5,260	21.6	718,888	18.3
$75,000 to $99,999	3,786	15.6	501,245	12.7
$100,000 to $149,999	3,899	16.0	556,921	14.2
$150,000 or More	2,358	9.7	427,441	10.8
MEDIAN HOUSEHOLD INCOME	$64,490		$57,144	
PEOPLE LIVING BELOW POVERTY LEVEL	4,613	7.7	1,398,527	13.4

Source*: U.S. Census Bureau: 2019 American Community Survey 5-Year Estimates, Tables DP03 and S1701*

Labor Force

Just over half of residents aged 16 and older participated in the labor force in 2019.[9] Most residents who participated in the labor force were employed, and only 3.0% were looking for work at that time. Approximately 18,028 residents above the age of 16 were not working or seeking employment (Table 5).[11]

A quarter of workers in Barry County work in manufacturing.[11] An additional 28% work in the retail sales, education, health care and social assistance sectors. Barry County has a small agricultural sector by percentage of labor force. In 2017, the county had 154,624 acres of farmland in use, divided among 938 farms. The market value of the products sold from these farmlands totaled $139,682,000.[13]

Table 5: ***Barry County and Michigan Labor Force***

	Barry County		Michigan	
	#	%	#	%
EMPLOYMENT				
Employed	29,100	59.8	4,654,930	57.8
Unemployed	1,475	3.0	293,894	3.7
Armed Forces	28	0.1	4,179	0.1
Not in Labor Force	18,028	37.1	3,096,766	38.5

Source: *U.S. Census Bureau: 2019 American Community Survey 5-Year Estimates, Table DP03*

Household/Housing Information

Among the 24,296 households in the county, approximately 58.2% were married-couple families in 2019.[11] Approximately 11.2% of households were single people living alone. The remaining 30.5% of households consisted of multi-person, non-family households and families headed by a single person with no spouse or partner present.[11] The majority of homes in Barry County were owned (83.5%) while the rest (16.5%) were rented (Table 6).[14]

Table 6: ***Barry County and Michigan Demographics – Households***

	Barry County		Michigan	
	#	%	#	%
TOTAL HOUSEHOLDS	24,296	-	3,935,041	-
HOUSEHOLD TYPE				
Married-Couple Family	14,150	58.2	1,853,456	47.1
Individuals Living Alone	2,727	11.2	1,164,019	29.6
Other Types of Households	7,419	30.5	917,566	23.3
Households with One or More People Under 18 Years	7,278	30.0	1,127,499	28.7
Households with One or More People 65 Years and Over	7,534	31.0	1,181,569	30.0
Owner-Occupied	20,299	83.5	2,802,699	71.2
Renter-Occupied	3,997	16.5	1,132,342	28.8

Source: *U.S. Census Bureau: 2019 American Community Survey 5-Year Estimates, Tables DP03 and DP04*

Veteran Status

Barry County was home to 3,931 veterans in 2019 (Table 7).[10]

Table 7: ***Barry County and Michigan Veteran Status***

	Barry County		Michigan	
	#	%	#	%
VETERAN STATUS				
Veteran	3,931	8.4	549,526	7.1
Non-Veteran	47,041	91.6	7,233,701	92.9

Source: *U.S. Census Bureau: 2019 American Community Survey 5-Year Estimates, Table DP02*

Births, Deaths, Marriages and Divorces

In 2019, Barry County had 689 live births, 626 deaths, 403 marriages and 224 divorces (Table 8).[9]

Table 8: ***Barry County and Michigan Births, Deaths, Marriages and Divorces, 2019***

	Barry County		Michigan
Event	#	Per 1,000 Population	Per 1,000 Population
Births	689	11.3	11.0
Deaths	626	10.2	9.9
Marriages	403	13.2	11.3
Divorces	224	7.3	5.6

Source: *Michigan Department of Health and Human Services, Division of Vital Records and Health Statistics: Community Health Information – Barry County, 2019*

Amish Population

Michigan is home to the sixth-largest Amish population in the United States.[15] Most of the Amish population is concentrated in the counties bordering Indiana and Ohio. However, there is an Amish settlement in Barry County. The Hastings settlement was established in 2006 and had an estimated population of 365 Amish members.[15]

Methodology

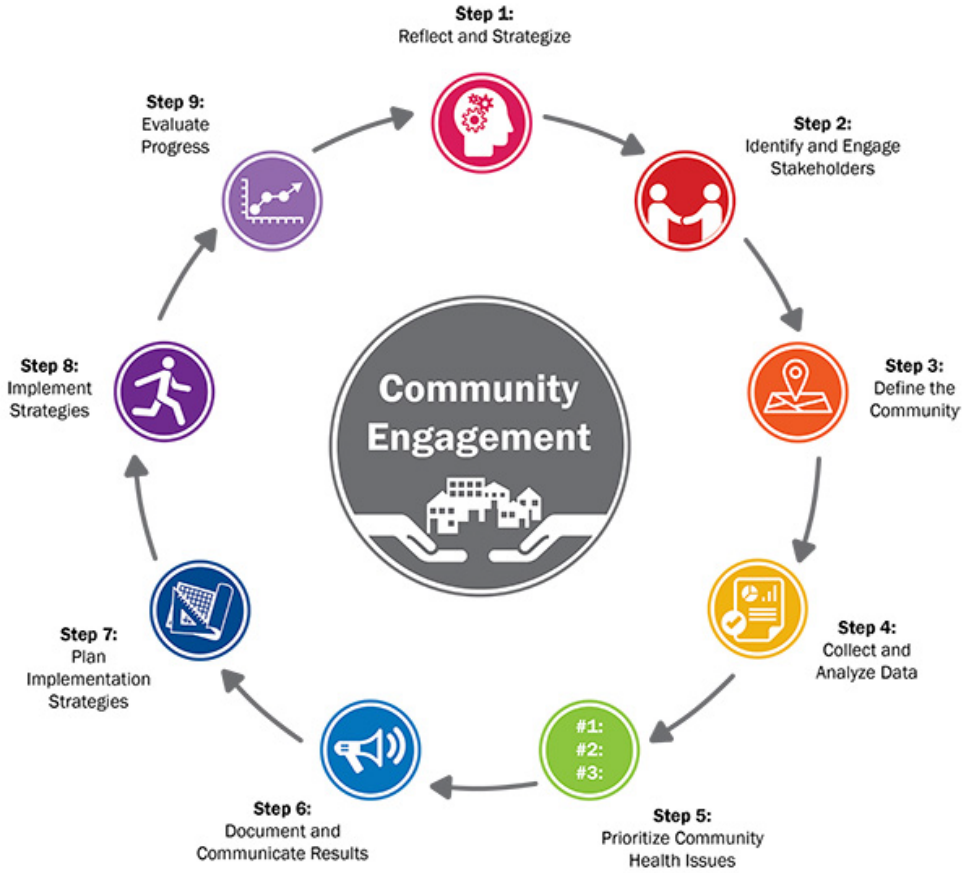
Two models were used in the development of this Community Health Assessment. One model structured the overall project and the other focused on how we conducted our data analysis.

Project Model

The model used to shape the project was based on the Community Health Assessment Toolkit (Figure 4) developed by the Association for Community Health Improvement.[16] The toolkit helped guide us in conducting a community health assessment and developing implementation strategies in an organized, methodical, and comprehensive process. This model is recognized by the Centers for Disease Control and Prevention. Some individual steps in this model were altered to meet Public Health Accreditation Bureau (PHAB) standards and to more fully embrace community engagement.

Throughout the process we also aimed to apply principles of health equity. Project staff created a plan that would address the inclusion of the social determinants of health, historically marginalized populations and community engagement mechanisms.

Figure 4: Association for Community Health Improvement's Community Health Assessment Toolkit



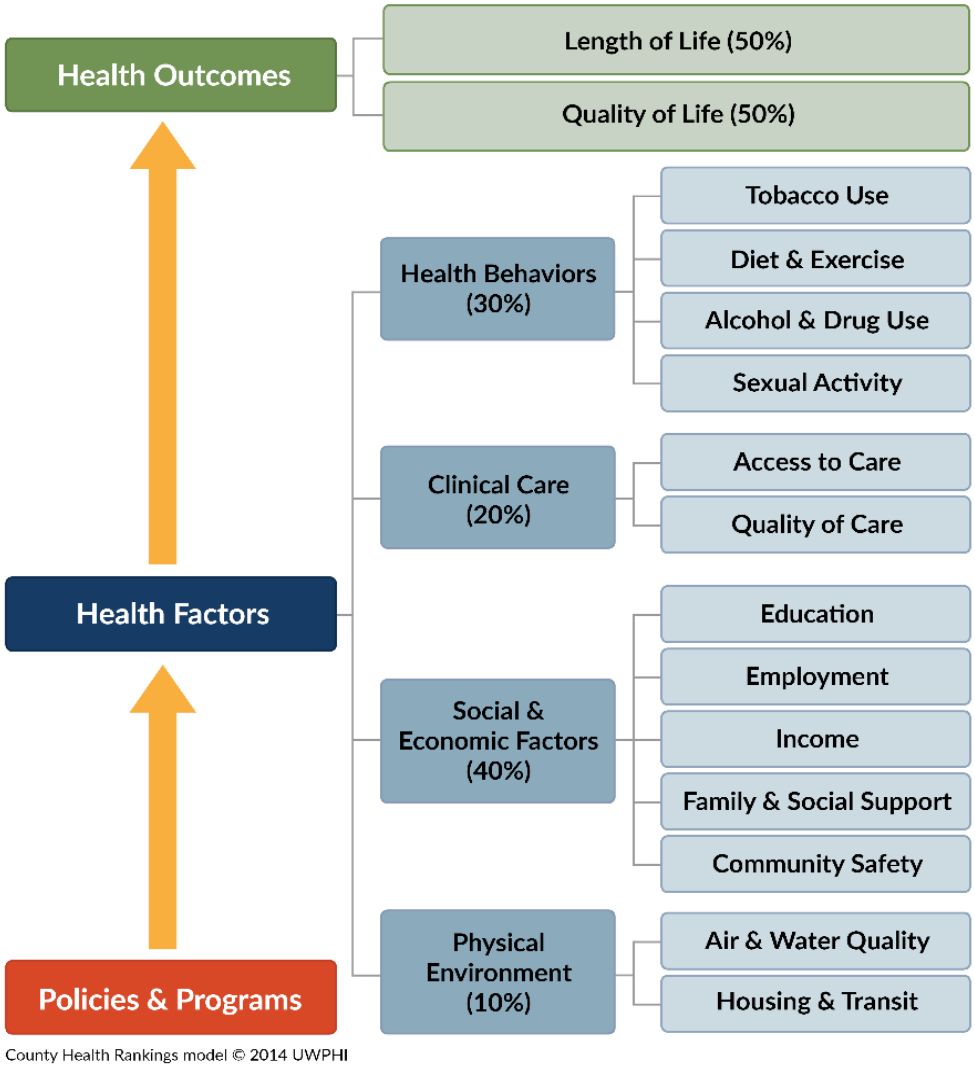
Source: Community Health Assessment Toolkit, www.healthycommunities.org

Data Model

The purpose of the data model was to ensure that the selected data measures used to inform this assessment were comprehensive and inclusive of as many factors impacting the health of the community as possible. We elected to use the County Health Rankings model, developed by the Milwaukee Population Health Institute in conjunction with the Robert Wood Johnson Foundation, to shape our data analysis (Figure 5).[17]

The County Health Rankings model uses health outcomes and factors, including health behaviors, clinical care, social and economic factors, and physical environment, by quantifying each component's effect on overall community health.

Figure 5: County Health Rankings Model

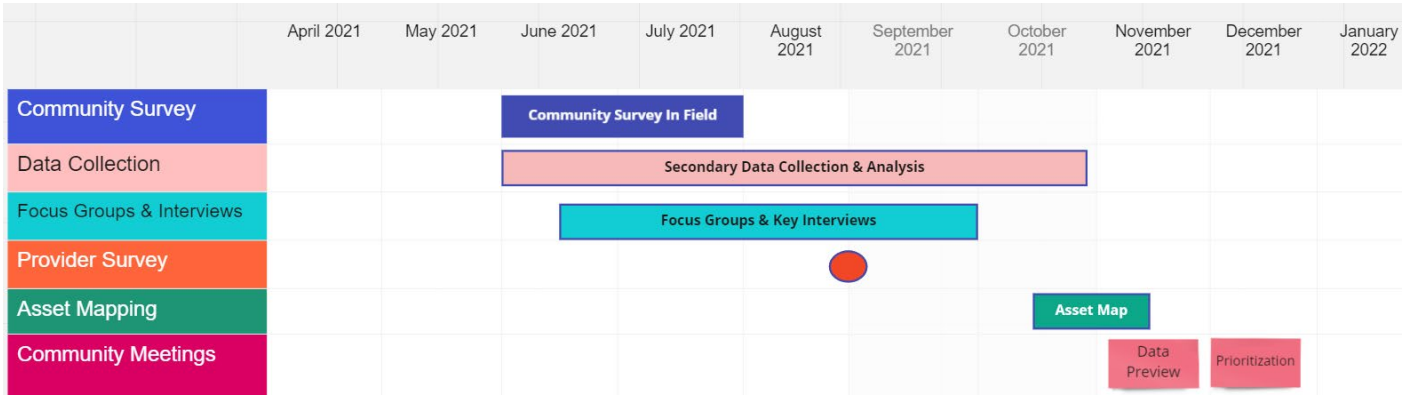


Source: Remington, Patrick L, Bridget B Catlin, and Keith P Gennuso. 2015. "The County Health Rankings: Rationale and Methods." *Population Health Metrics* 13 (11): 1-12.

Data Collection

Data collection and analysis took place between April and October 2021 (Figure 6). The data in this report can be categorized into two types: primary and secondary data. Primary data refers to firsthand data gathered by partnering organizations (ex. Barry County Behavioral Risk Factor Survey, Community Interviews). Secondary data means that the data was collected by someone else (ex. MDHHS Vital Statistics). Both quantitative (numbers) and qualitative (stories) data were collected for this project.

Figure 6: Project and Data Collection Timeline



Primary Data Collection

In this assessment, five primary data collection activities were used to gather information from the general public, individuals with specialized knowledge about the community, public health experts and underserved community members (Table 9). Information from the general public was gathered using a web-based community survey. Information about public meetings, including the data review and the community prioritization meeting, was posted via social media and email groups. The information needed for the Community Health Assessment was sought from individuals and groups with specialized community and public health knowledge.

During the assessment and prioritization process, information was periodically sought from historically marginalized community members and the Assessment Advisory Committee. The Assessment Advisory Committee consisted of organizations and key stakeholders with specialized knowledge of the general public.

Table 9: **Primary Data Collection Activities**

Activity	*Data Collection Methodology*	*Target Group*	*Audience*	*Number of Respondents*
Community Survey	Web-Based Survey	Individuals Who Live and Work in Barry County	Community Residents	404
Healthcare Provider Survey	Web-Based Survey	Physicians, Advanced Practice Providers and Other Primary Care Providers Working in Barry County	People Who Represent the Broad Interests of the Community	33
Asset Mapping Survey	Web-Based Survey	Individuals Who Live and Work in Barry County	Residents of Barry County and Those With Specialized Understanding of County Resources	15
Underserved Focus Group/ Interviews	Focus Groups and In-Depth Interviews	Underserved Residents of Barry County	Community Residents (Uninsured People, Low-Income People and Minority Groups)	8
Leadership/ Key Stakeholder Focus Group	Facilitated Discussion	Barry County Leadership and Stakeholders	People Who Represent the Broad Interests of the Community	14

Community Survey

The Barry County Community Survey was a web-based, convenience-sample survey of Barry County residents in the field between June and July 2021. The survey aimed to collect information on community-identified needs, quality of life, health literacy and early pandemic experience from adults who live and work in Barry County. There were 404 respondents to the Community Survey (Table 9). The Community Survey Tool used for this Community Health Needs Assessment can be found in Appendix D.

Healthcare Provider Survey

The Barry County Healthcare Provider Survey was a separate web-based survey conducted in August 2021 by primary care physicians and advanced practice providers who work in Barry County. There were 33 respondents to this survey (Table 9). Providers from Spectrum Health Pennock and those with multiple affiliations with Pennock and hospitals in the surrounding counties were asked about general health needs, barriers experienced by their patients, the social needs of their patient population and community resources they refer their patients to. The Healthcare Provider Survey used for this Community Health Assessment can be found in Appendix E.

Asset Mapping Survey

Attendees of the June 30, 2021, Community Health Needs Assessment Advisory Committee meeting were asked to review the provided asset inventory and vote on which asset categories (and individual assets within a category) would be most beneficial to the assessment process if they could be geographically mapped within Barry County. The purpose of this survey was to gather information about community assets that may not be easily identifiable to people living outside of the community. A total of 15 Community Health Needs Assessment Advisory Committee members participated in the survey (Table 9).

Underserved Focus Groups/Interviews

The Barry-Eaton District Health Department interviewed eight Barry County residents identified as members of historically marginalized populations with the assistance of the Barry County United Way between Oct. 24 and Nov. 4, 2021. These individuals were either uninsured, of low income or a member of a minority group. These interviews were recorded, and the audio was then transcribed. The transcribed text was analyzed to identify key themes that emerged during the conversation that would provide greater insight into the health needs and concerns of underserved members of the community. Eight individuals were included in these focus groups and interviews (Table 9). Questions asked during the focus group can be found in Appendix F.

Leadership/Key Stakeholder Focus Group

On Oct. 1, 2021, leaders from various sectors in Barry County met to discuss the state of health in Barry County. The meeting was held virtually on Zoom. The discussion was facilitated by Barry-Eaton District Health Department staff members, who asked a series of questions to spark conversation around community health and barriers to health that community members may experience. Fourteen individuals participated in the key stakeholder focus group (Table 9). Questions asked during the focus group can be found in Appendix G.

Secondary Data Collection

The indicators and measures used in this report were identified by the Barry County Community Health Needs Assessment Workgroup and were reviewed and approved by the Barry County Community Health Needs Assessment Steering Committee and the Barry County Community Health Needs Assessment Advisory Committee.

Table 10 shows the indicators and measures selected and their relationship to the data framework. Descriptions of all the data sources used in this report can be found in Appendix A.

Data Analysis

For each indicator available, data is presented in a variety of ways to paint the fullest picture possible and provide as much context as can be given. Where available, we will provide point-in-time estimates, trend data, breakouts by race and ethnicity, income, education and more.

Table 10: ***Community Health Needs Assessment Indicators and Measures***

Domain	**Indicator Group**	**Measure**
Health Outcomes	***Length of Life***	Mortality Rate per 100,000
		Suicide Rate per 100,000
		Premature Death
		Age-Adjusted Rate of Death Due to Transportation Accidents
		Infant Mortality Rate
	Quality of Life	Poor or Fair Health
		Poor Mental Health Days
		Emotional Support
Health Factors	***Health Behaviors & Physical Condition***	Binge Drinking in Adults
		Binge Drinking in Adolescents
		Current Smoking in Adults
		Vaping in Adults
		Marijuana Use
		Breast Cancer Screening
		Colon Cancer Screening
		Percentage of Non-Medical Immunization Waivers Granted
		Adult Weight Distribution (BMI Categories)
		Adolescent Weight Distribution (BMI Categories)
	Clinical Care	Adult Diabetes Prevalence
		Ambulatory Care Sensitive Hospitalizations: Diabetes
		Diabetes Management Education
		Adult Asthma Prevalence
		Ambulatory Care Sensitive Hospitalizations: Asthma
		Ambulatory Care Sensitive Hospitalizations: Chronic Obstructive Pulmonary Disease
		Ambulatory Care Sensitive Hospitalizations: Congestive Heart Failure
		Disability
		High Cholesterol
		High Blood Pressure
		Preventable Hospital Stays per 100,000
		Persons with a Primary Care Provider
		Health Care Access
		Dental Care Access
		Mental Health Providers (Ratio)
	Social & Economic Factors	Gini Coefficient of Income Inequality
		Housing Affordability
		Percentage of Households Below Asset Limited, Income Constrained, Employed Threshold
		Lever of Education in Adults Over Age 25
	Physical Environment	Percentage of Population Living in Food Desert
		Internet Subscription
		Rate of Elevated Blood Lead Levels
		Air Pollution – PM2.5

Community Input

Input from our community residents, including the historically marginalized, those with a specialized understanding of community resources and people who represent the broad interest of the community, was essential to the Community Health Assessment process. Information was collected through multiple surveys (community specific, health care provider and community asset mapping) and conducting multiple focused interviews targeting the underserved population, county leadership and stakeholders of Barry County. While this primary data directly helps to identify what the community needs, the prioritization process uses this information in conjunction with secondary data sources to prioritize the community-identified significant health needs.

Overall Key Findings

- Access to affordable health care was a recurring theme throughout the surveys and focus group interviews and has remained an issue over several cycles.
- Difficulties in accessing mental health services and the shortage of mental and behavioral health providers were recurring themes across all five primary data collection activities.
- Community members and health care providers in Barry County both agreed that addressing social needs is as important as addressing medical conditions.
- The COVID-19 pandemic has made pre-existing gaps in opportunity even more pronounced.

Community Survey

The Barry County Community Survey is a web-based survey that collected information from Barry County residents about a number of health topics ranging from the things that make a healthy community to how residents access health information. The survey was distributed via social media by the Barry-Eaton District Health Department, Spectrum Health Pennock, and through the traditional networks of the health and human service organizations.

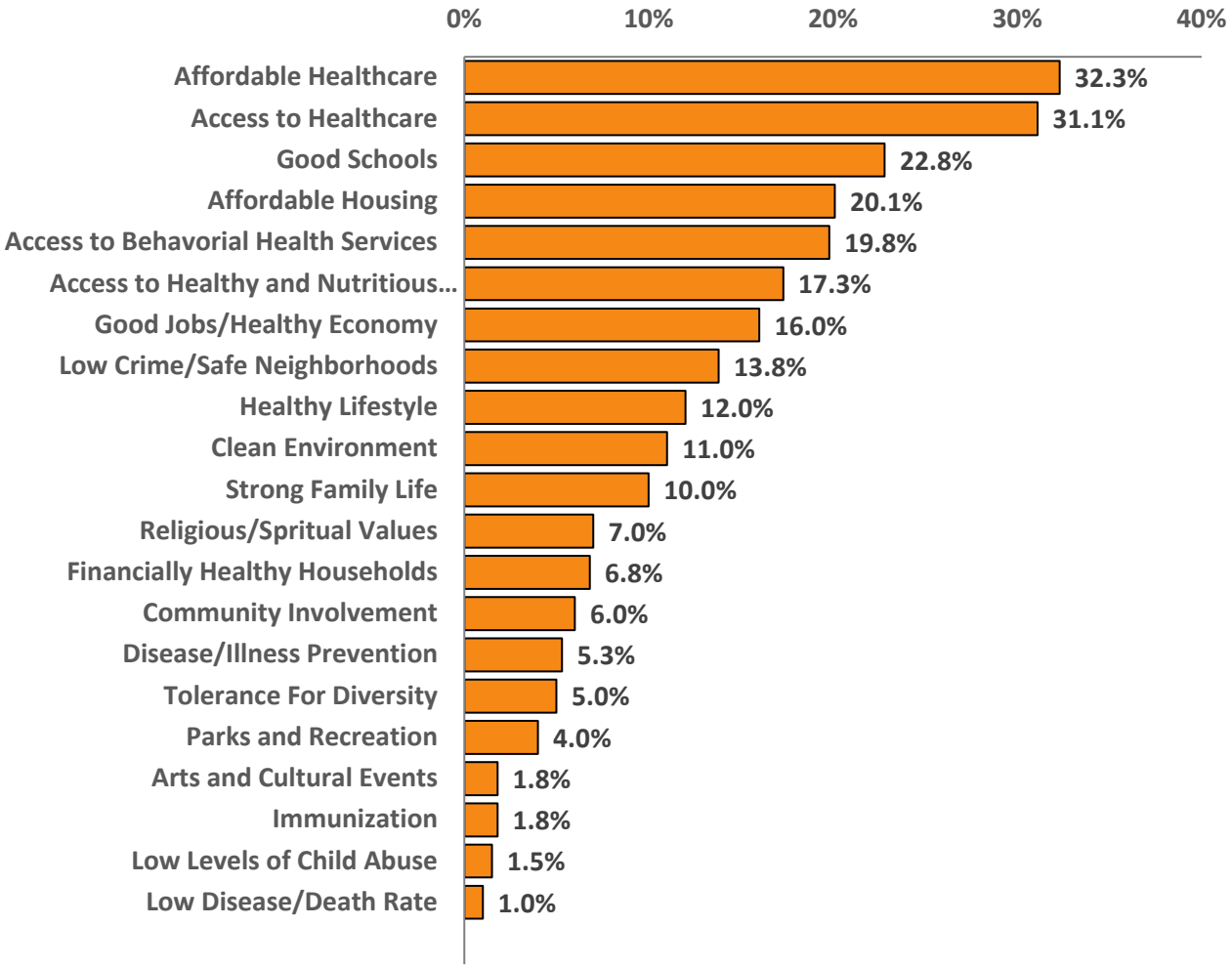
Barry County Community Survey Key Findings

- Affordable and accessible health care is a hallmark of a healthy community, but there are still problems with accessibility.
- Substance misuse and the lack of availability of affordable behavioral health services were top concerns among respondents.
- Many respondents agreed that addressing social issues in the community was important.
- Most respondents felt they had the means and ability to access what they needed to maintain or improve their health.

Factors That Define a Healthy Community

Three of the top five community-identified factors that define a healthy community were related to health care, including affordable health care (32.3%), access to health care (31.1%) and access to behavioral health services (19.8%). These three factors have been among the top concerns cited by the community for several CHA cycles. The remaining two factors comprising the top five were the presence of good schools (22.8%) and affordable housing (20.1%) (Figure 7).

Figure 7: Community Member-Identified Factors That Define a Healthy Community

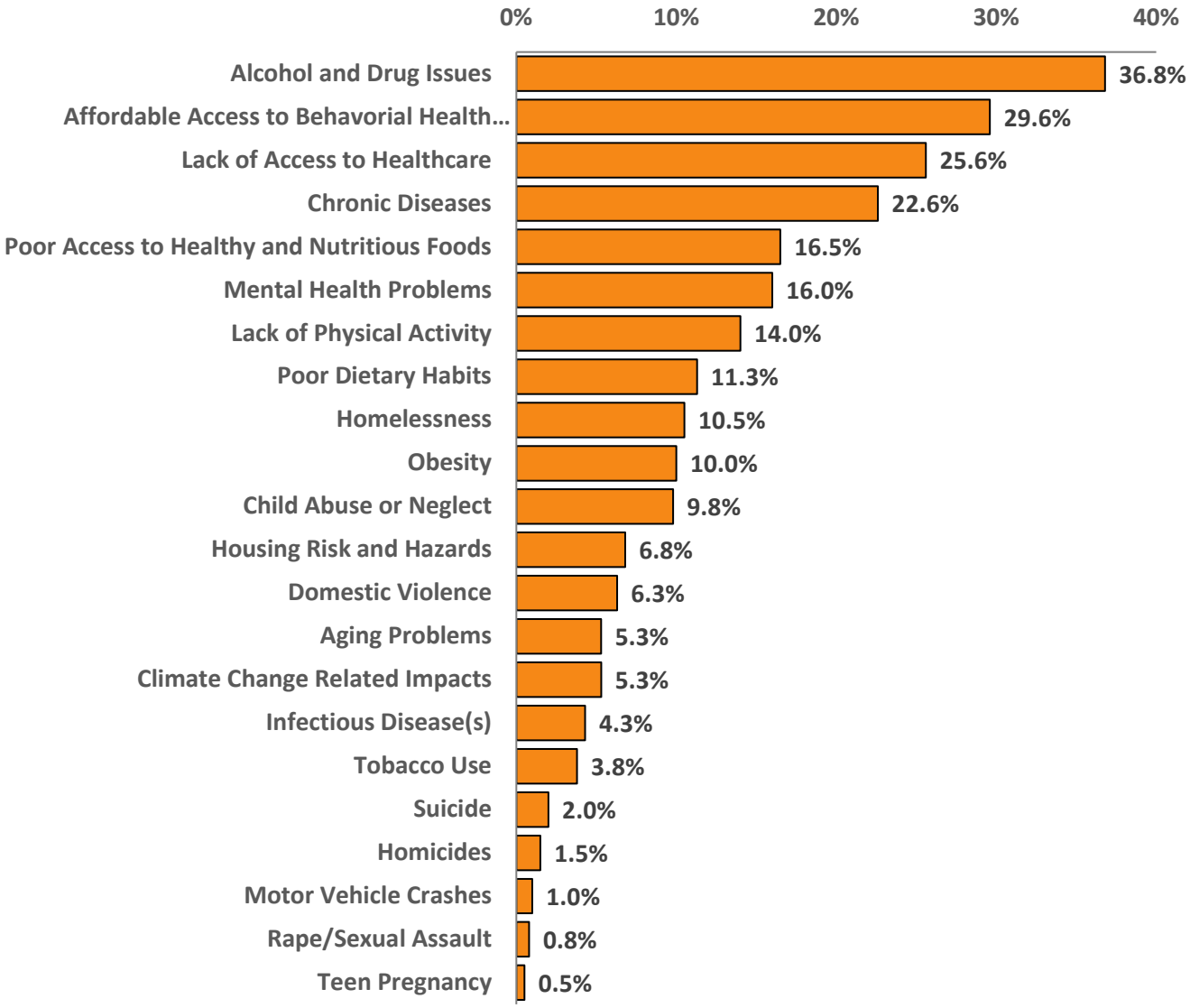


Source: 2021 Barry County Community Health Needs Assessment Community Survey

Problems Impacting the Community

The top four community-identified problems impacting Barry County were alcohol and drug issues (36.8%), affordable access to behavioral health services (29.6%), lack of access to health care (25.6%) and chronic disease (22.6%) (Figure 8).

Figure 8: Community Member-Identified Problems Impacting the Community

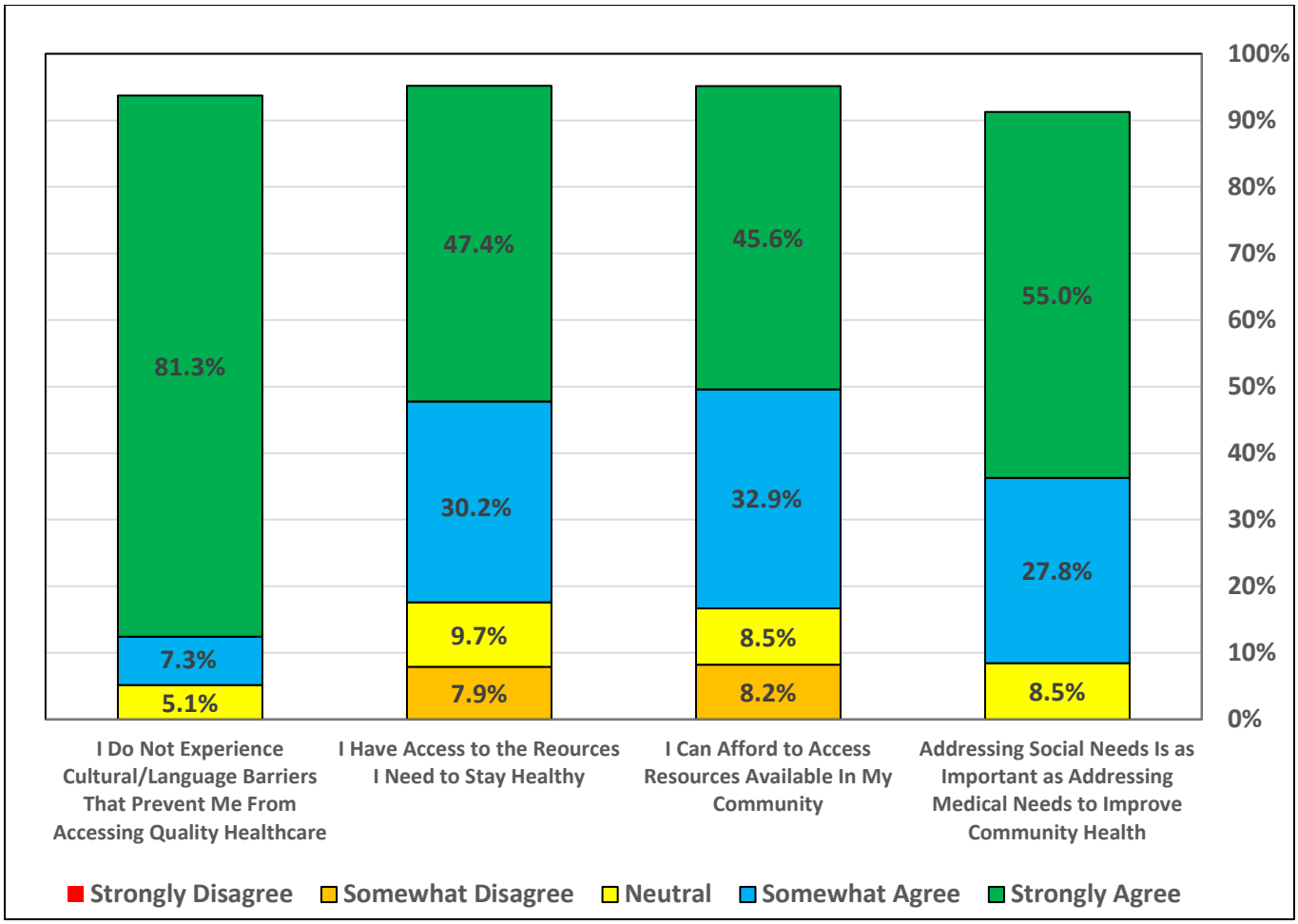


Source: 2021 Barry County Community Health Needs Assessment Community Survey

Community Members' Agreement with Various Health Statements

Most community survey respondents somewhat or strongly agreed that addressing social needs is as essential as addressing medical needs to improve community health (82.8%), that they can afford to access resources available in their community (78.5%), that they have access to the resources needed to stay healthy (77.6%) and that they were not experiencing cultural/language barriers that prevented them from accessing quality health care (88.6%) (Figure 9).

Figure 9: Community Members' Agreement with Various Health Statements



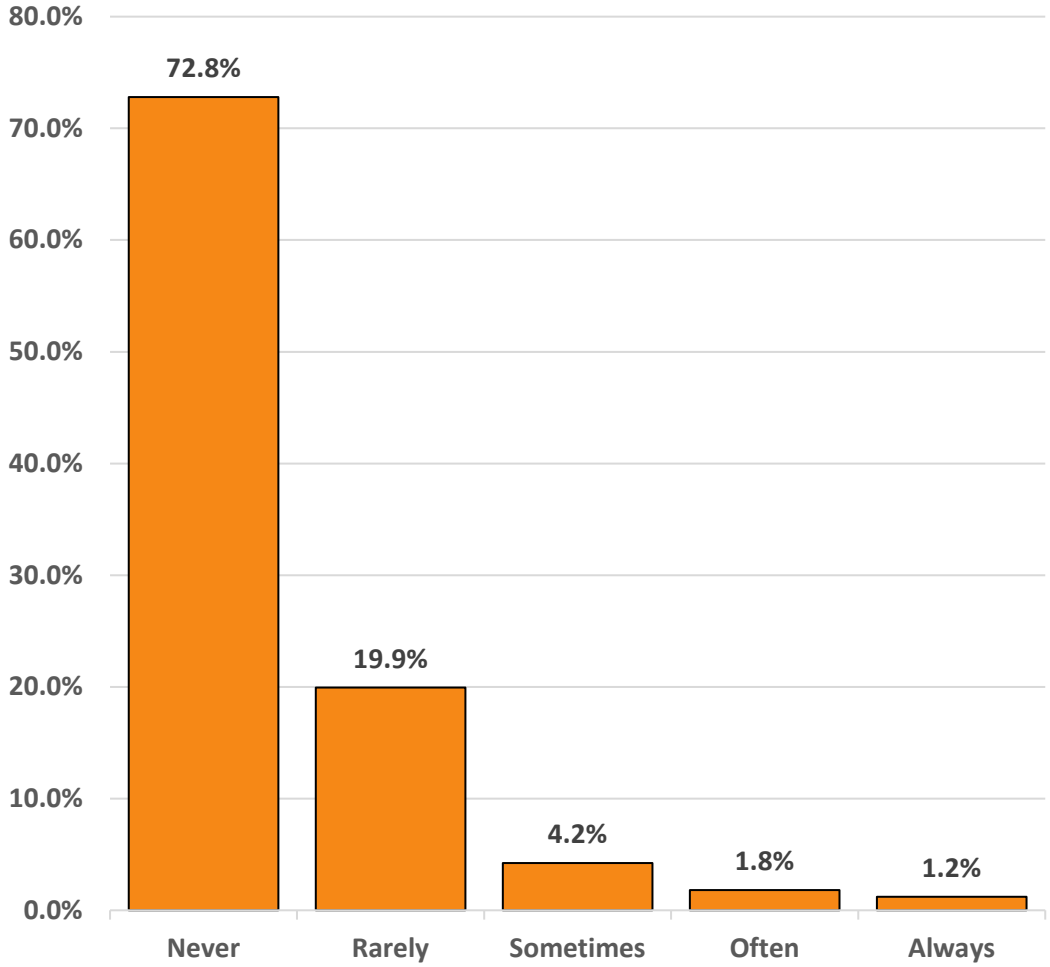
Source: 2021 Barry County Community Health Needs Assessment Community Survey

Need for Assistance Reading Health-Related Instruction or Other Material from Their Provider

Health literacy refers to the ability of a person to understand and use the information they have acquired to make informed decisions about their or another person's health and health care.[18]

In Barry County, health literacy is relatively high. 92.7% of respondents indicated that they either never or rarely need assistance reading health-related instructions or other materials from their health care provider (Figure 10).

Figure 10: Community Members' Need for Assistance Reading Health-Related Instruction or Other Material from Their Provider

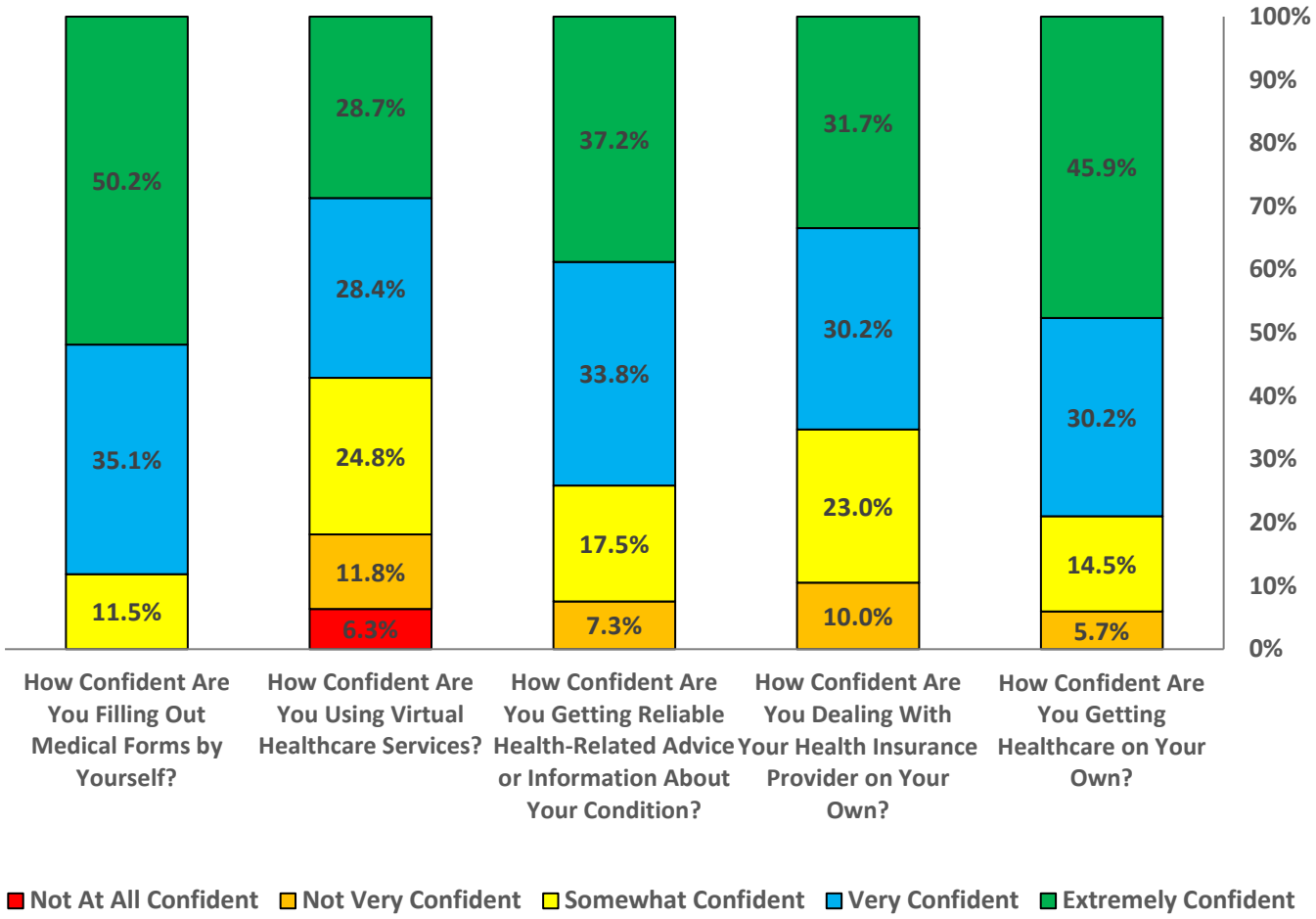


Source: 2021 Barry County Community Health Needs Assessment Community Survey

Community Members' Confidence with Accessing Health Care

Respondents were extremely confident getting health care on their own (45.9%), dealing with their health insurance provider on their own (31.7%), getting reliable health-related advice or information about their condition (37.2%), using virtual health care services (28.7%) and filling out medical forms by themselves (50.2%) (Figure 11).

Figure 11: Community Members' Confidence with Accessing Health Care

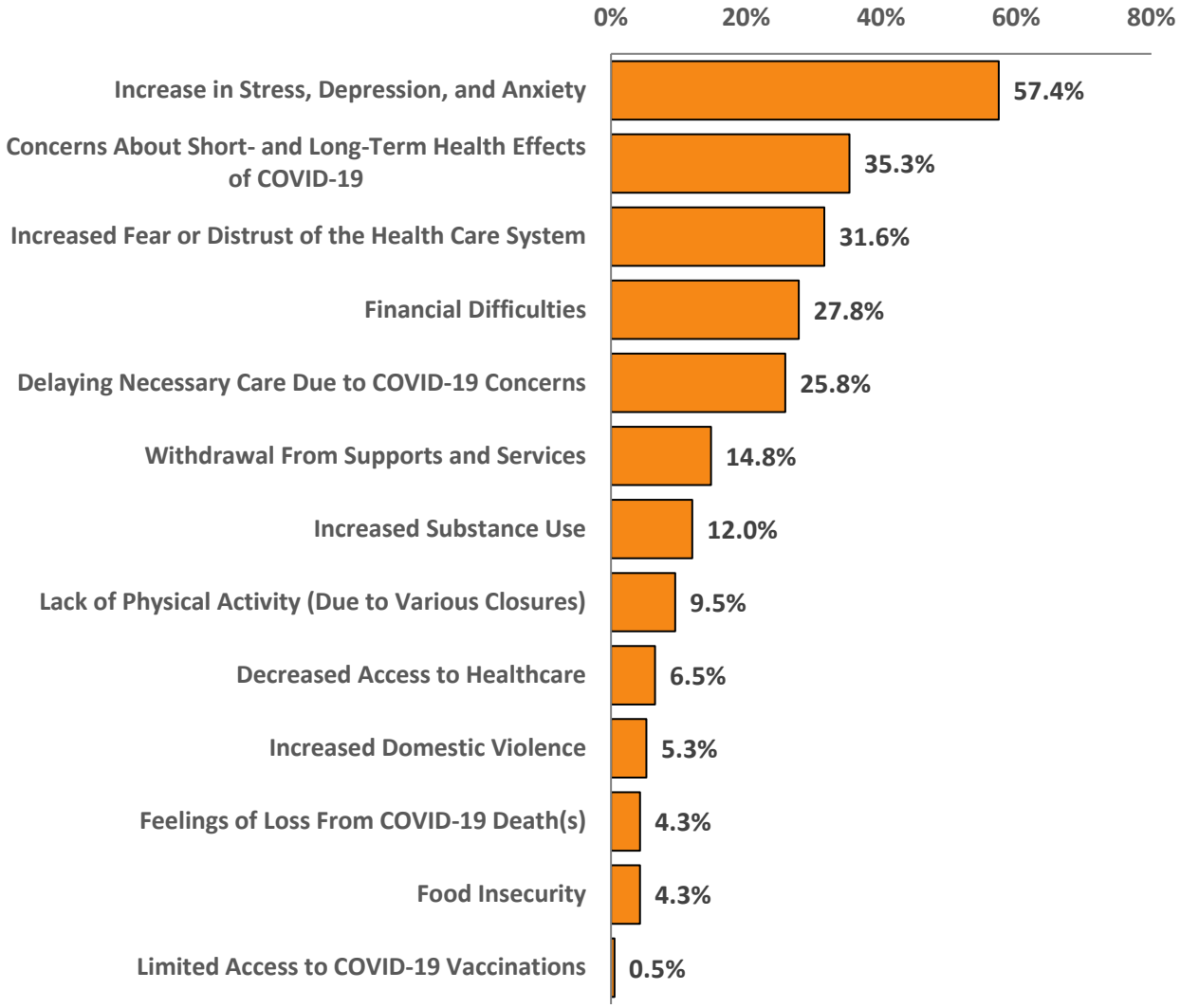


Source: 2021 Barry County Community Health Needs Assessment Community Survey

COVID-19 Pandemic-Related Concerns Impacting Community Members' Family/Household

More than half of respondents in June and July of 2021 indicated increased stress, depression and anxiety (57.4%) as a concern related to the COVID-19 pandemic. About a third of respondents mentioned that they were concerned about short- and long-term health effects from COVID-19 (35.3%), had an increased fear or distrust of the health care system (31.6%) and were concerned about financial difficulties (27.8%) (Figure 12).

Figure 12: COVID-19 Pandemic-Related Concerns Impacting Community Members' Family / Household

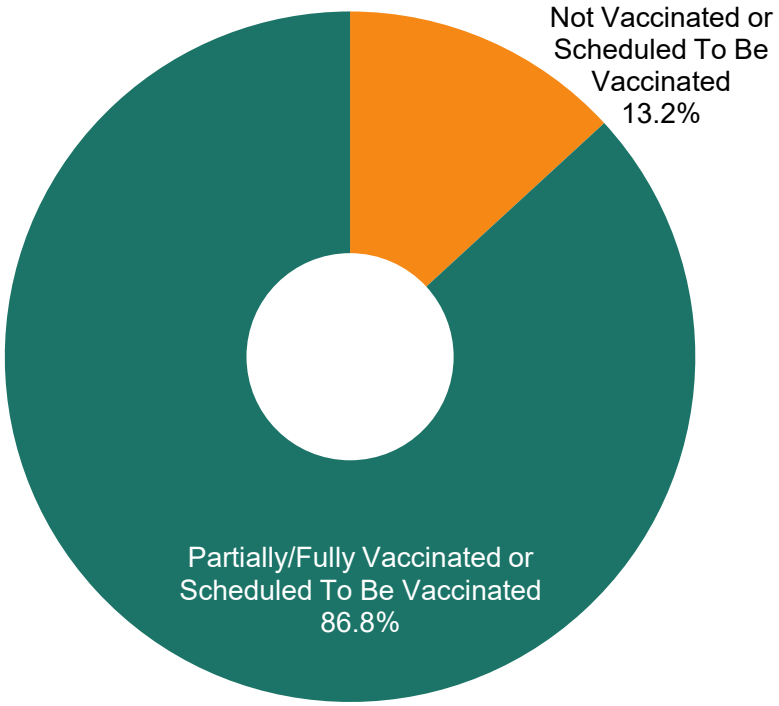


Source: 2021 Barry County Community Health Needs Assessment Community Survey

Community Members' COVID-19 Vaccination Status

When the survey was administered in July and August 2021, 13.2% of respondents indicated that they were not vaccinated or were not scheduled to be vaccinated at that time. (Figure 13).

Figure 13: Community Members' COVID-19 Vaccination Status

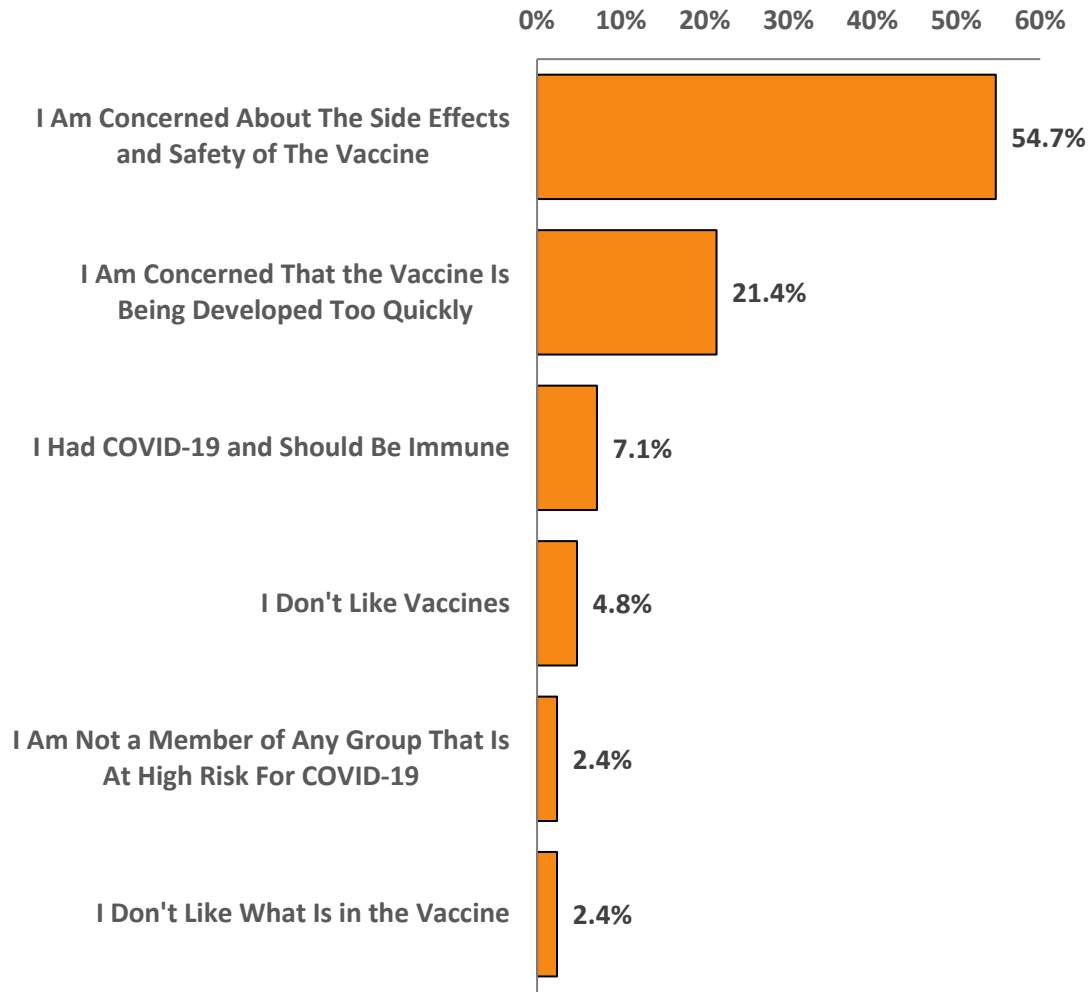


Source: 2021 Barry County Community Health Needs Assessment Community Survey

Reasons for Not Getting COVID-19 Vaccine Among the Unvaccinated

The top reasons for why community members were not vaccinated include concerns about the side effects and safety of the vaccine (54.7%) and that the vaccine was developed too quickly (21.4%) (Figure 14).

Figure 14: Unvaccinated Community Members Reasons for Not Getting COVID-19 Vaccine

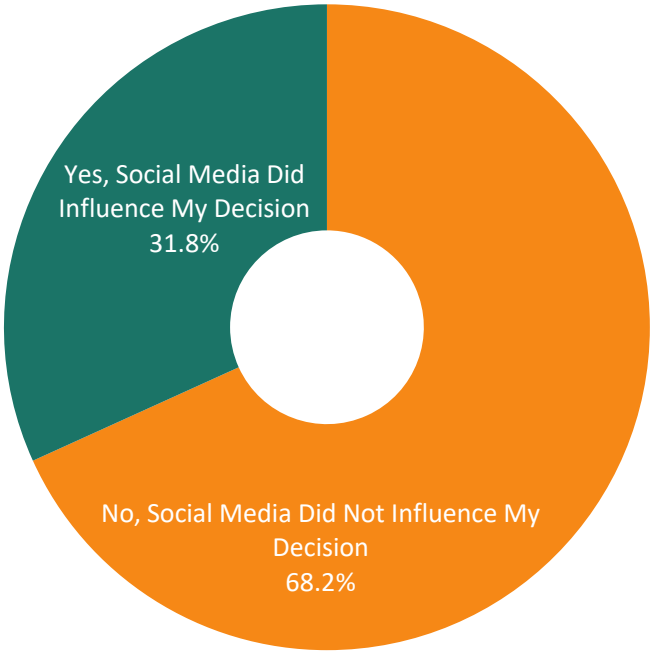


Source: 2021 Barry County Community Health Needs Assessment Community Survey

Social Media's Influence on Community Members' COVID-19 Vaccine Decision

Just under a third of the respondents indicated that their decision to be vaccinated against COVID-19 was influenced by social media (Figure 15).

Figure 15: Social Media's Influence on Community Members' COVID-19 Vaccine Decision



Source: 2021 Barry County Community Health Needs Assessment Community Survey

Healthcare Provider Survey

Another group that provided us with valuable input were health care providers in Barry County, which included physicians, nurse practitioners and physician assistants. Representatives from Spectrum Health Pennock and those with multiple hospital affiliations, including Spectrum Health Pennock and hospitals in the surrounding counties, participated in the Healthcare Provider Survey. Their role as health care providers, whom most individuals interact with, gives them specialized knowledge and insight regarding the health of the community members of Barry County. Unless otherwise noted, the charts and graphs reflect the thoughts and opinions of all health care providers active in Barry County, regardless of their health system affiliation.

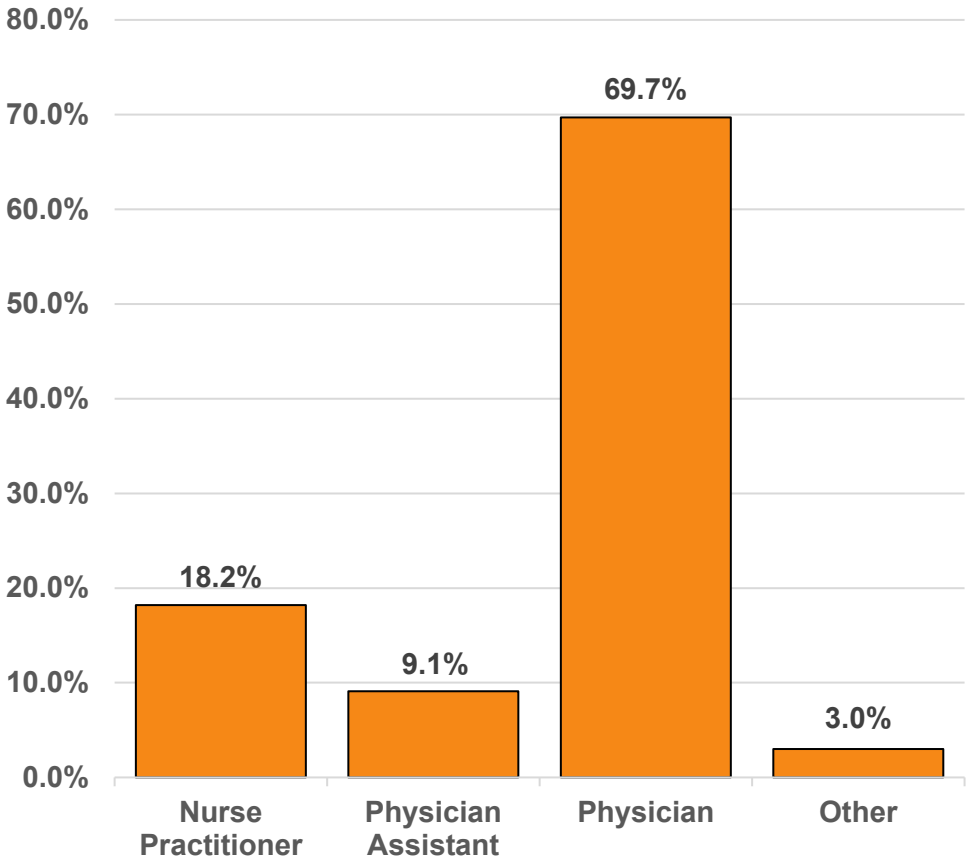
Barry County Provider Survey Key Findings

- Accessibility and affordability of health care, including mental and behavioral health services, were key markers of a healthy community to most providers.
- Limited resources to access care or the lack of motivation to make health-conscious decisions negatively impacted patients' health.
- Community services that most primary care providers are referring their patients to include additional support in the home, mental health support and substance abuse treatment services.
- Most physicians surveyed are concerned about the increased fear and distrust of the health care system, the effects of vaccine hesitancy and the psychological distress their patients are experiencing because of the COVID-19 pandemic.
- The pandemic has also affected health care providers themselves. Most of them indicated that they were feeling very overwhelmed at work.

Health Care Provider Job Title and Affiliation

Survey respondents represented various types of health care providers working in the county. Among those who responded, 69.7% were physicians, 18.2% were nurse practitioners and 9.1% were physician assistants (Figure 16).

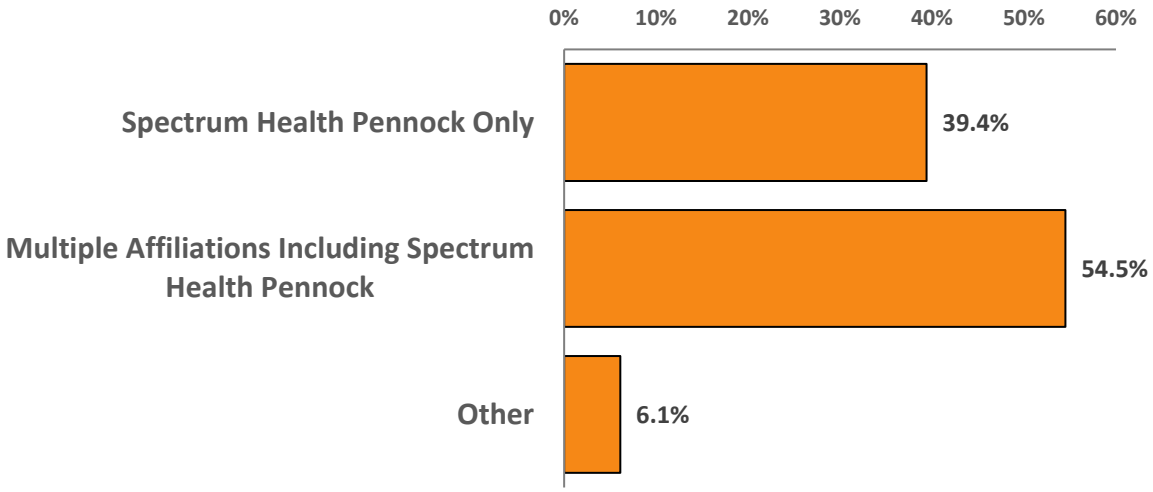
Figure 16: Health Care Provider Job Title



Source: 2021 Barry County Community Health Needs Asessment Healthcare Provider Survey

Health care providers responding to the survey had a variety of affiliations. Just over 39% of survey respondents were affiliated with only Spectrum Health Pennock, 54.5% had multiple affiliations, including Spectrum Health Pennock, and 6.1% of respondents had affiliations elsewhere (Figure 17).

Figure 17: Health Care Provider Affiliation

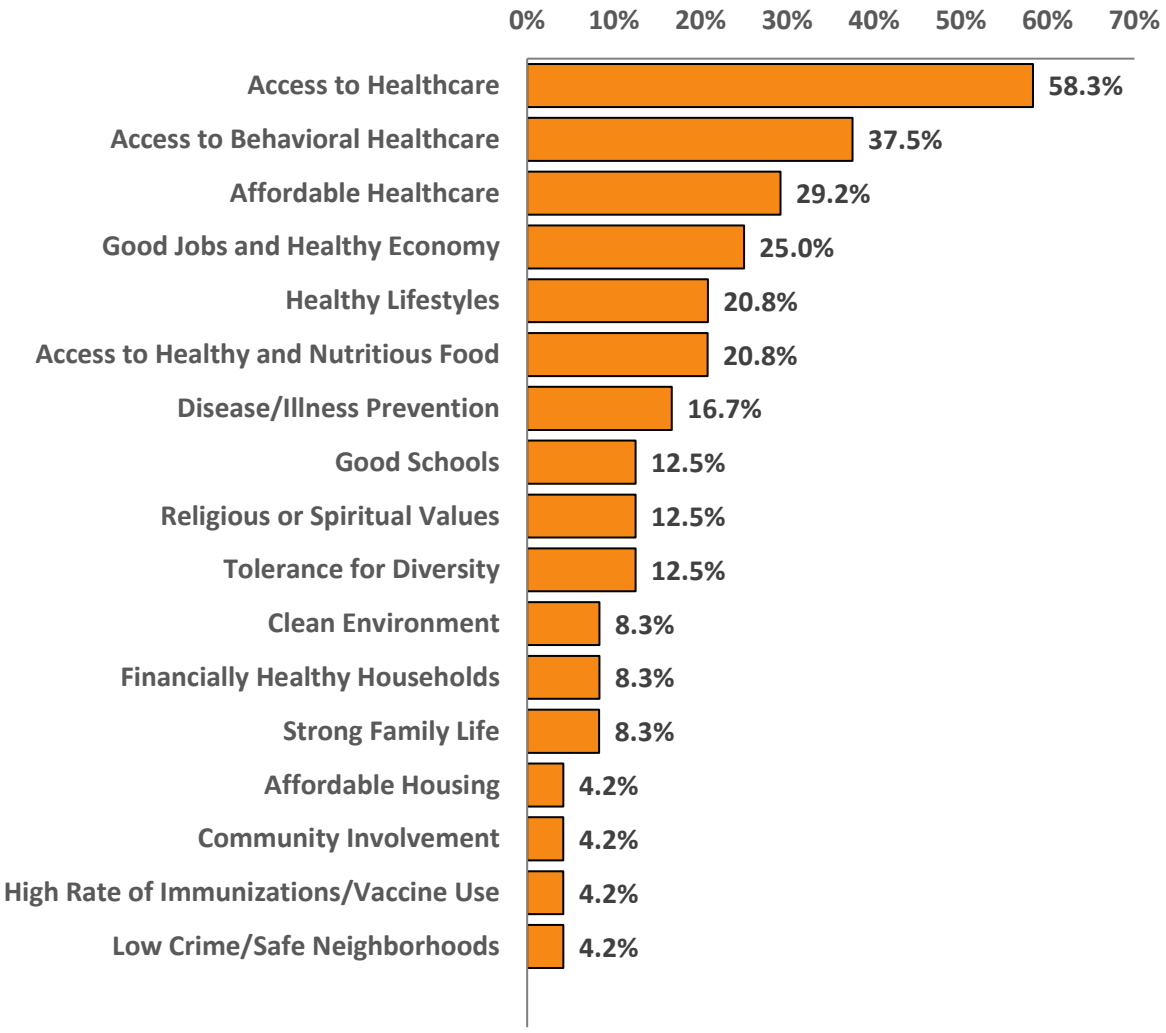


Source: 2021 Barry County Community Health Needs Asessment Healthcare Provider Survey

Health Care Provider-Identified Factors That Define a Healthy Community

Three of the top five health care provider-identified factors that define a healthy community were related to health care, including access to health care (58.3%), access to behavioral health care (37.5%) and affordable health care (29.2%). The remaining two factors from the top five were the presence of good jobs and a healthy economy (25.0%) and living a healthy lifestyle (20.8%) (Figure 18).

Figure 18: Health Care Provider-Identified Factors That Define a Healthy Community

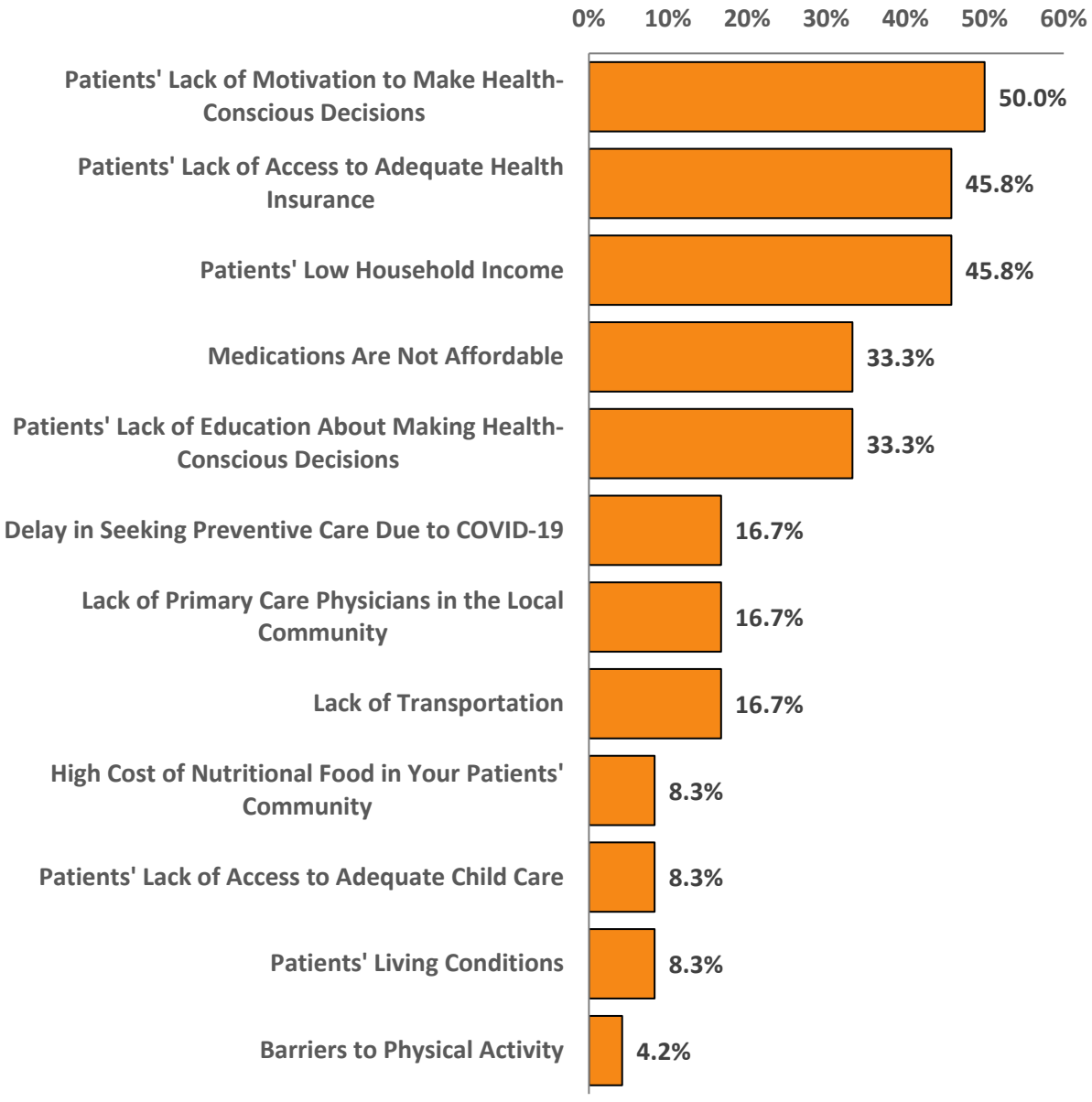


Source: 2021 Barry County Community Health Needs Asessment Healthcare Provider Survey

Health Care Provider-Identified Factors Negatively Impacting Patient Health

The top five health care provider-identified factors negatively impacting patient health in Barry County were patients' lack of motivation to make health-conscious decisions (50.0%), patients' lack of access to adequate health insurance (45.8%), patients' low household income (45.8%), lack of affordable medications (33.3%) and patients' lack of education about making health-conscious decisions (33.3%) (Figure 19).

Figure 19: Health Care Provider-Identified Factors Negatively Impacting Patient Health

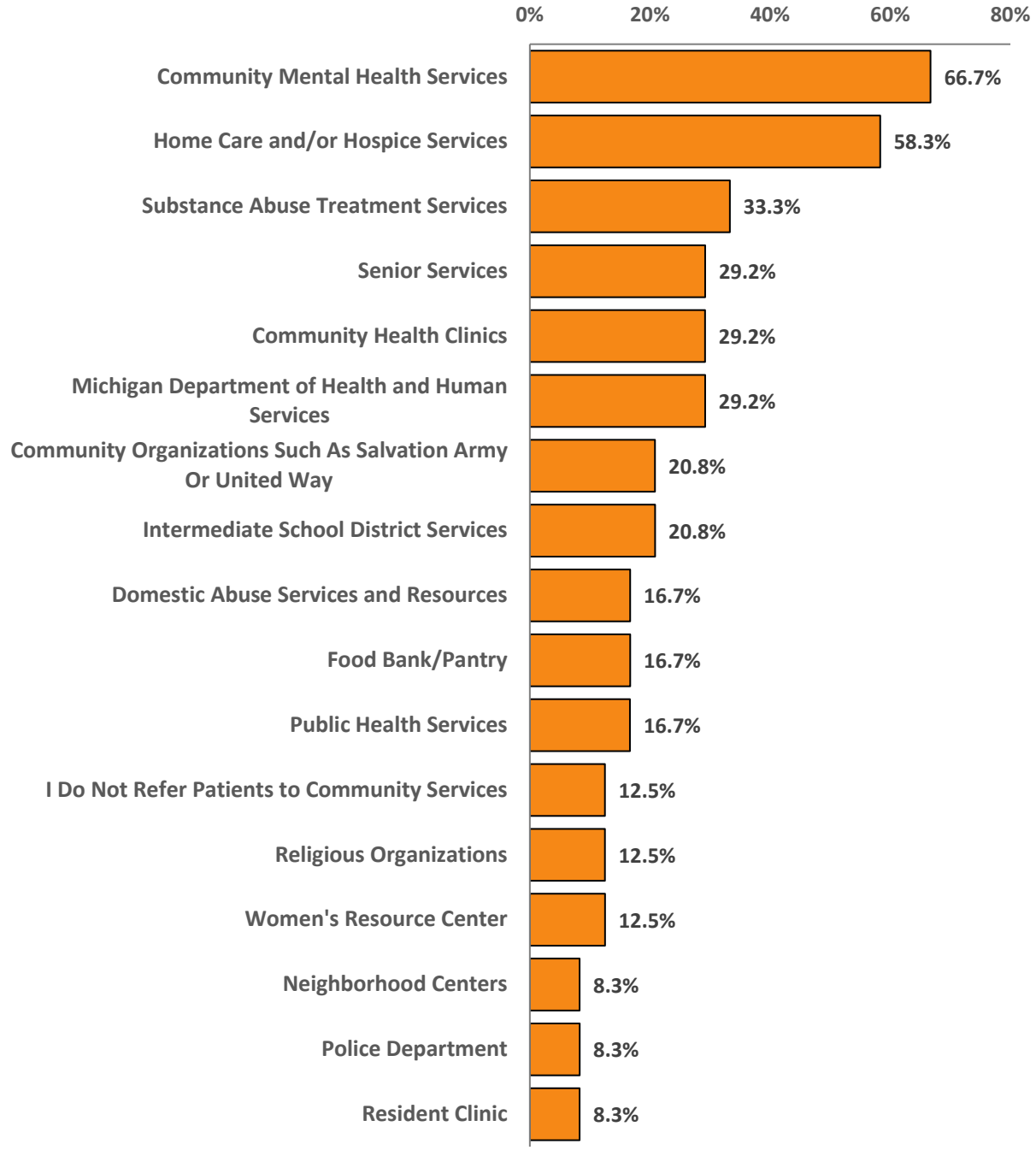


Source: 2021 Barry County Community Health Needs Asessment Healthcare Provider Survey

Health Care Provider-Identified Community Resources to Which Patients Were Referred

The top three community resources that patients were referred to by providers were community mental health services (66.7%), home care and/or hospice services (58.3%), and substance abuse treatment services (33.3%) (Figure 20).

Figure 20: Health Care Provider-Identified Community Resources to Which Patients Were Referred



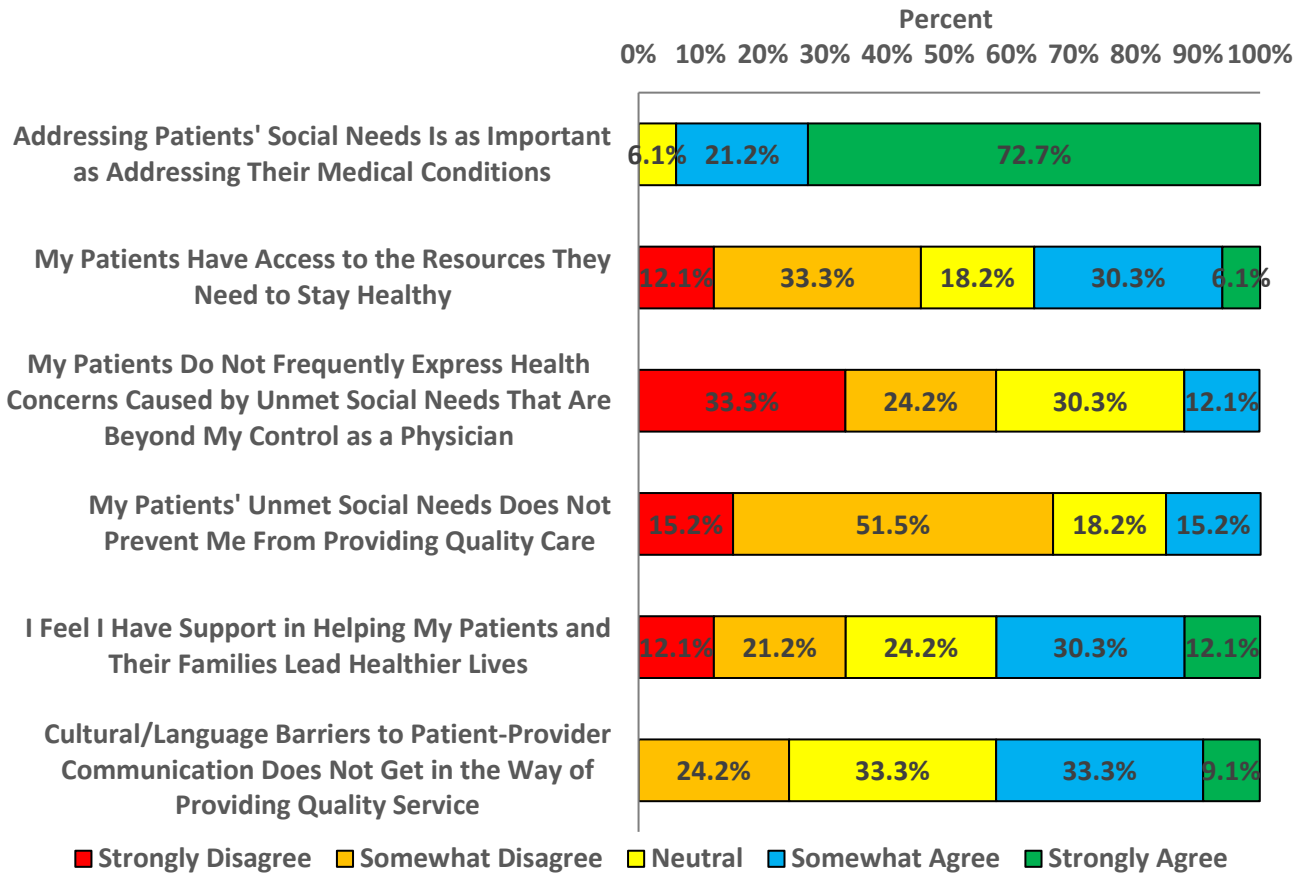
Source: 2021 Barry County Community Health Needs Asessment Healthcare Provider Survey

Health Care Providers' Agreement with Various Health Statements

Most health care providers surveyed strongly agreed or somewhat agreed that addressing patients' social needs is as important as addressing their medical conditions (93.9%). Barry County providers felt they have the support needed to help patients and their families lead healthier lives and cultural/language barriers do not get in the way of providing quality services to the patient (42.4%, respectively).

Health care providers surveyed strongly or somewhat disagreed that their patients had access to the resources needed to stay healthy (45.4%). Reponses also indicated that they felt their patients do not frequently express health concerns caused by unmet social needs beyond the control of the physician (57.5%) and that patients' unmet social needs to not prevent them from proving quality care (66.7%) (Figure 21).

Figure 21: Health Care Provider Respondents' Agreement with Various Health Statements

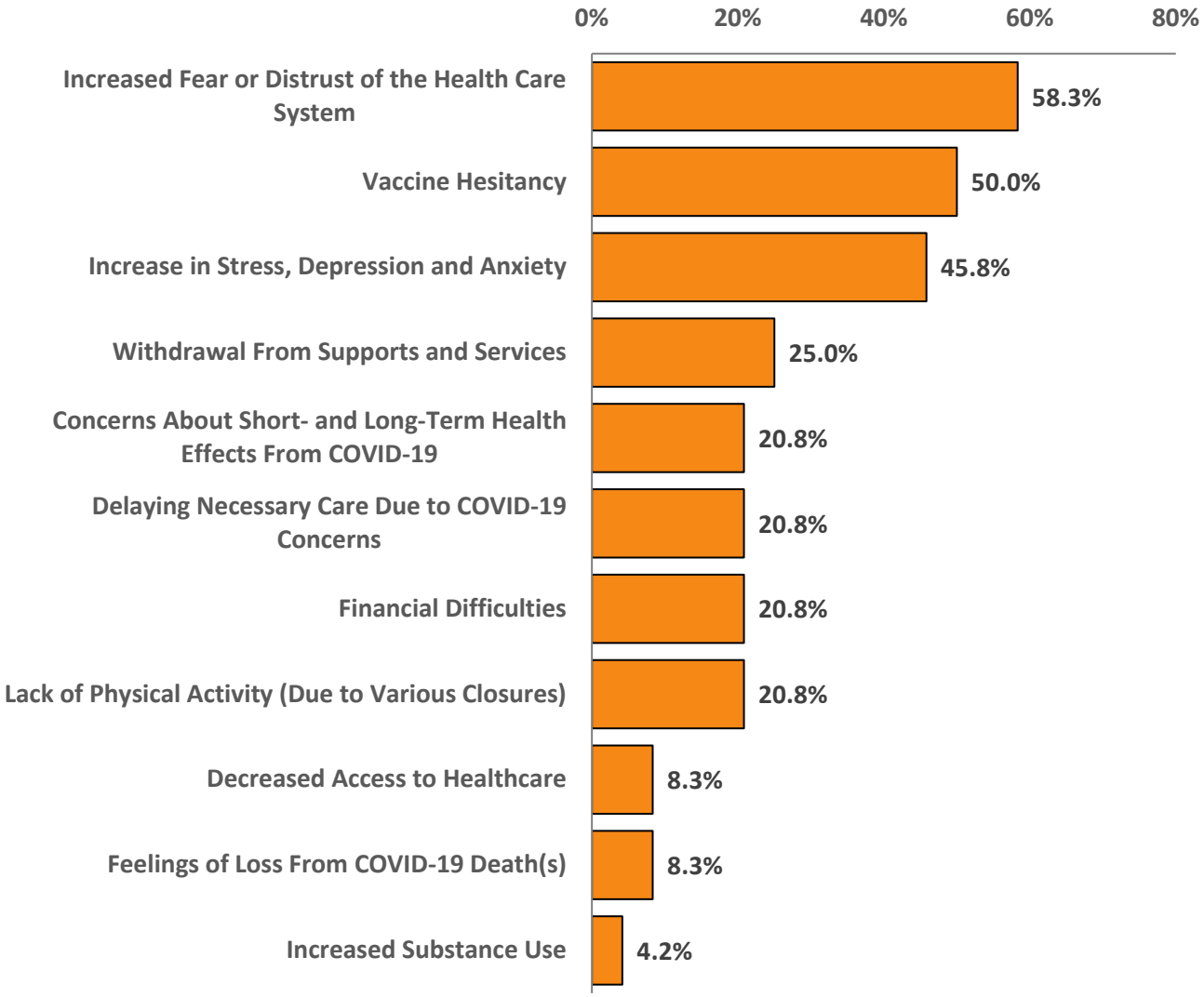


Source: 2021 Barry County Community Health Needs Asessment Healthcare Provider Survey

Health Care Provider Identified Health-Related Concerns Associated With the COVID-19 Pandemic

More than half of health care providers indicated their patients' increased fear or distrust of the health care system as their top COVID-19 health-related concern (58.3%). Respondents were also concerned about vaccine hesitancy (50.0%) and increased stress, depression and anxiety (45.8%) as top concerns related to the COVID-19 pandemic (Figure 22).

Figure 22: Health Care Provider Identified Health-Related Concerns Associated With the COVID-19 Pandemic

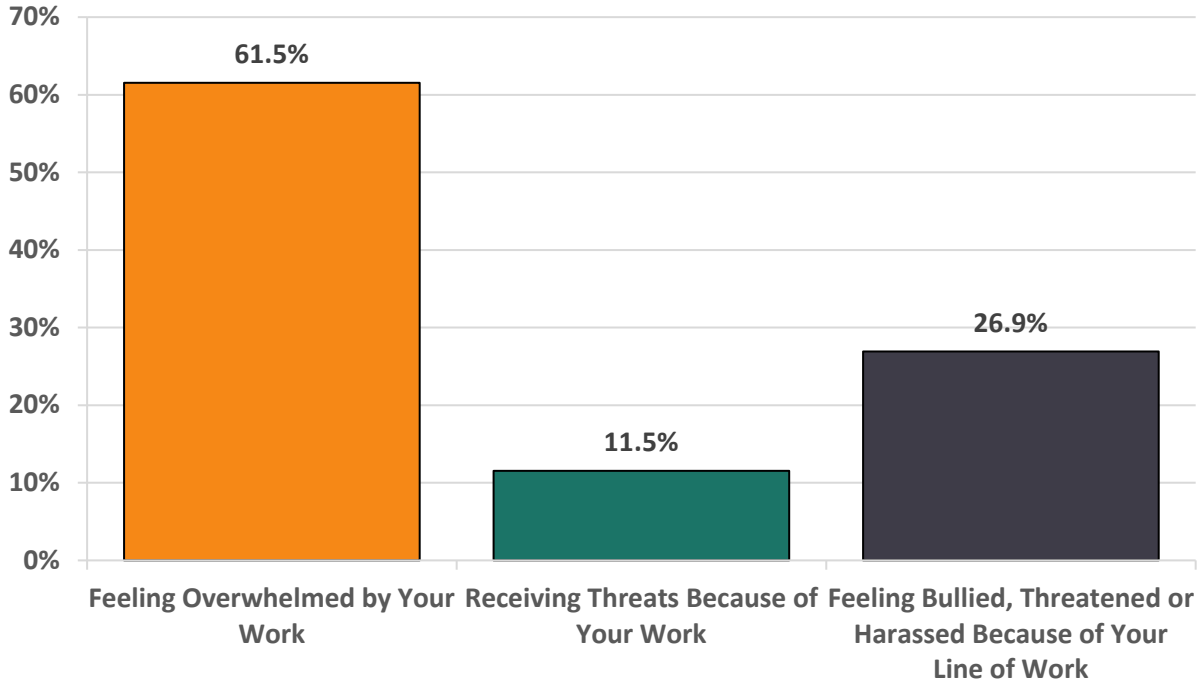


Source: 2021 Barry County Community Health Needs Asessment Healthcare Provider Survey

Health Care Provider Experience of Traumatic Events or Stressors During the COVID-19 Pandemic

When asked about their own experiences regarding the pandemic, 61.5% of the providers surveyed indicated that they were feeling very overwhelmed about their work, followed by feeling bullied, threatened or harassed because of their line of work (26.9%), and receiving threats because of their work (11.5%) (Figure 23).

Figure 23: Health Care Provider Experience of Traumatic Events or Stressors During the COVID-19 Pandemic



Source: 2021 Barry County Community Health Needs Asessment Healthcare Provider Survey

Historically Marginalized Population Interviews

An essential aspect of this Community Health Assessment is to ensure that everyone in the community has an opportunity to be heard, especially those whose voices may be hardest to hear. Consequently, one data collection activity targeted more historically vulnerable community members: low-income, Medicaid-eligible and minority populations.

Barry County Underserved Population Interview Key Findings

- The availability of services and appointments for mental health and medical care in Barry County came up as barriers to care impacting disease management.
- People encountered difficulties in accessing mental health services in situations in which the person needing care was not in immediate danger to themselves or those around them.
- Having a chronic condition or a family member with a chronic condition resulted in challenges, not only physiologically but socially and economically.

Underserved Population Focus Group Themes Related to Access to Care

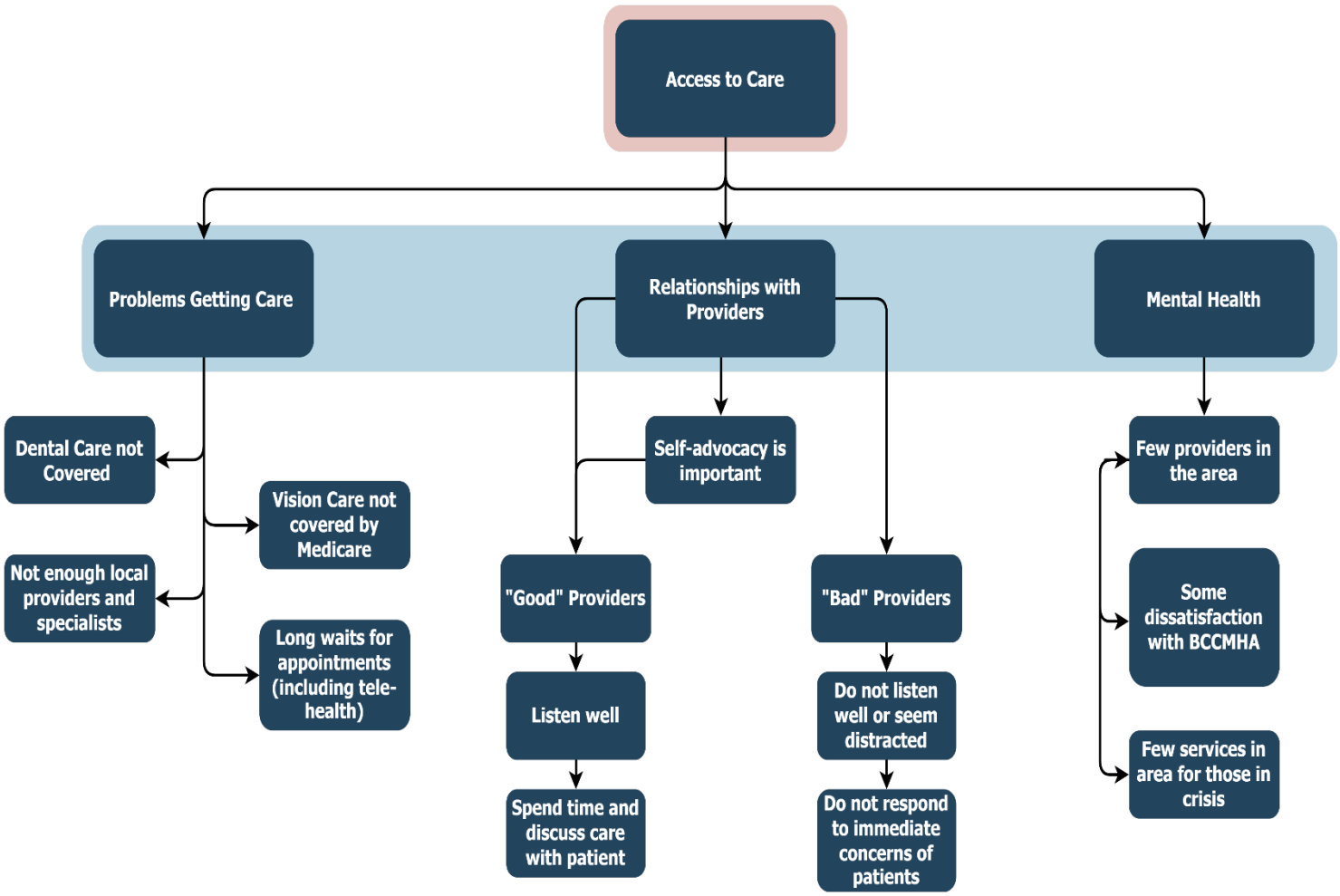
Emerging themes from the underserved population focus group regarding barriers to accessing care included problems getting care, relationships with providers and mental health.

Common barriers to getting care included dental care not being covered, vision care not being covered by Medicare, not enough local providers and specialists, and long waits for appointments.

When it came to relationships with providers, participants noted that self-advocacy was important. When it came to differentiating between good and bad health care providers, participants noted that good providers listened well and discussed the plan of care with patients.

For mental health, barriers included few providers in the area, dissatisfaction with the Barry County Community Mental Health Authority and few services in the area that are available to provide care for those in crisis (Figure 24).

Figure 24: Underserved Interview Concept Map for Access to Care



Source: 2021 Barry County Community Health Needs Assessment Underserved Population Interviews

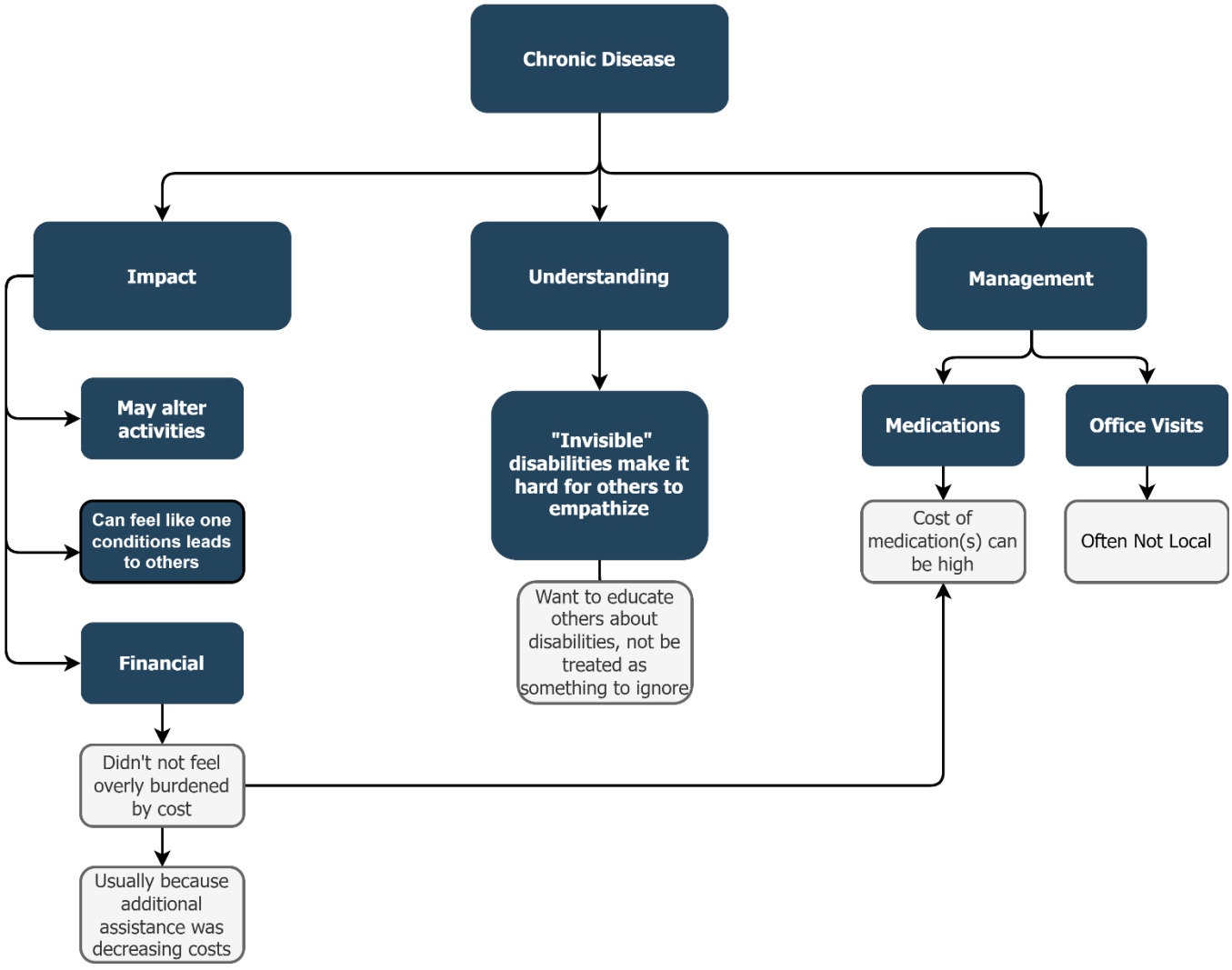
Underserved Population Focus Group Themes Related to Chronic Diseases

Interviewees were asked about managing their chronic disease(s) and its impact on their lives. Focus group participants noted that chronic disease(s) might alter their activities, that they feel like one condition leads to others, and that they do not feel overly burdened by cost.

Since chronic diseases may not be apparent to others, “invisible” disabilities make it hard for others to empathize. A potential solution to this problem identified during the focus group was to increase the amount of education and awareness in the general population about disabilities.

Members of the focus group identified barriers in managing their chronic disease(s) including cost of medication and the availability of appointments for treatment and management. Office visits were often not locally available (Figure 25).

Figure 25: Underserved Population Interview Concept Map for Chronic Diseases



Source: 2021 Barry County Community Health Needs Assessment Underserved Population Interviews

County Leadership/Key Stakeholder Input

On Oct. 1, 2021, leaders from various organizations met to discuss the state of health in Barry County. The meeting was held virtually on Zoom and facilitated by the Barry-Eaton District Health Department. A series of questions were asked to help identify concerns and barriers in the community. A summary of findings with supporting quotations follows.

Barry County Leadership/Key Stakeholder Discussion Key Findings

- Health care providers are scarce, particularly mental and behavioral health providers.
- The availability of safe and affordable housing is low, and that scarcity impacts a variety of individuals from underserved residents to providers being recruited by health and social service organizations.
- Individuals and families without broadband internet access are facing obstacles that not only obstruct their ability to go about normal daily activities safely, but also limit their ability to access health care and public resources.
- Although resources are limited, services are available for residents who need them.

County Leader/Key Stakeholder-Identified Pressing Health Needs or Issues

When asked about the most pressing health needs or issues in Barry County, local leaders and stakeholders mentioned lack of mental health services, lack of specialty care, lack of physical and behavioral health providers, lack of child care, lack of affordable housing, and an increased need for resources to address food insecurity (Figure 26).

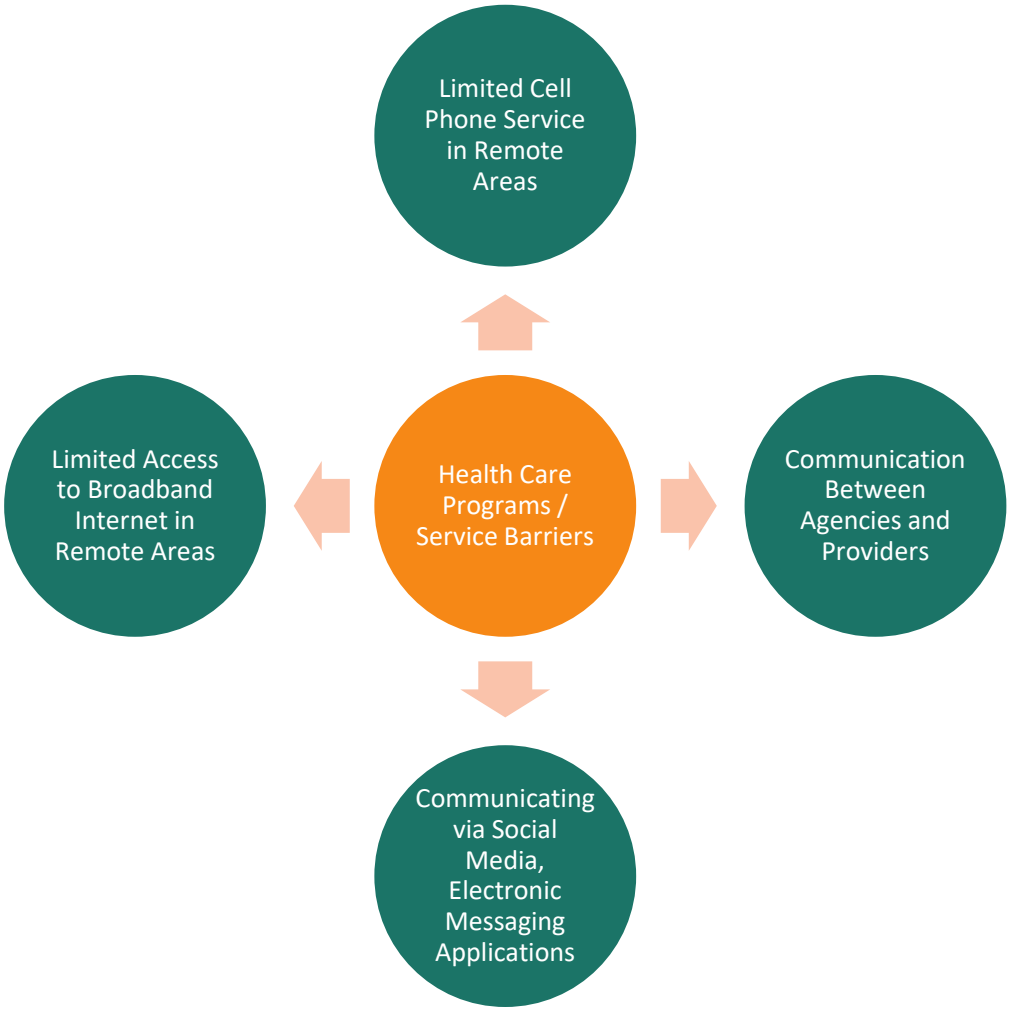
Figure 26: County Leader/Key Stakeholder-Identified Pressing Health Needs or Issues

Source: 2021 Barry County Community Health Needs Assessment County Leaders/Key Stakeholders Focus Group

County Leader/Key Stakeholder-Identified Barriers or Obstacles to Health Care Programs/Services

When asked to identify barriers or obstacles to accessing health care programs and services, local leaders and stakeholders noted that limited access to broadband internet and cell phone service in remote areas in Barry County had been an issue. Limited access has made searching for health care and other services more difficult. Other barriers or obstacles identified include communication issues between agencies and health care providers and difficulties communicating with community members via social media, electronic communication and messaging applications (Figure 27).

Figure 27: County Leader/Key Stakeholder-Identified Barriers or Obstacles to Health Care Programs/Services



Source: 2021 Barry County Community Health Needs Assessment County Leaders/Key Stakeholders Focus Group

County Leaders/Key Stakeholders' Viewpoint on Meeting the Needs of the Community

When asked about how well existing programs and services are meeting the needs and demands of the community, county leaders and key stakeholders thought that civic groups within Barry County were strong and met the needs of residents. Participants also highlighted a strong sense of cooperation among agencies within Barry County. However, the focus group noted that even though key stakeholders are highly involved with the community, they felt like there may still be room for additional involvement or a better way to meet community needs (Figure 28).

Figure 28: County Leaders/Key Stakeholders' Viewpoint on Meeting the Needs of the Community

Source: 2021 Barry County Community Health Needs Assessment County Leaders/Key Stakeholders Focus Group

Factors Contributing to Health

Health Care Access and Quality

According to the National Academies of Sciences, Engineering, and Medicine (formerly known as the Institute of Medicine), access to health care is defined as the "timely use of personal health services to achieve the best possible health outcomes."[19] Having regular access to a primary care provider and dentist provides better health outcomes. Improving access to health care professionals will "improve quality of care, emphasis on prevention, [and] the identification and early management of conditions," resulting in better health outcomes and reducing health disparities.[20]

Preventive care practices, such as screenings and vaccinations, are essential tools and methods to detect diseases early and prevent severe illnesses.[21] Early detection and preventive measures could avert serious illnesses and reduce premature deaths in the community.

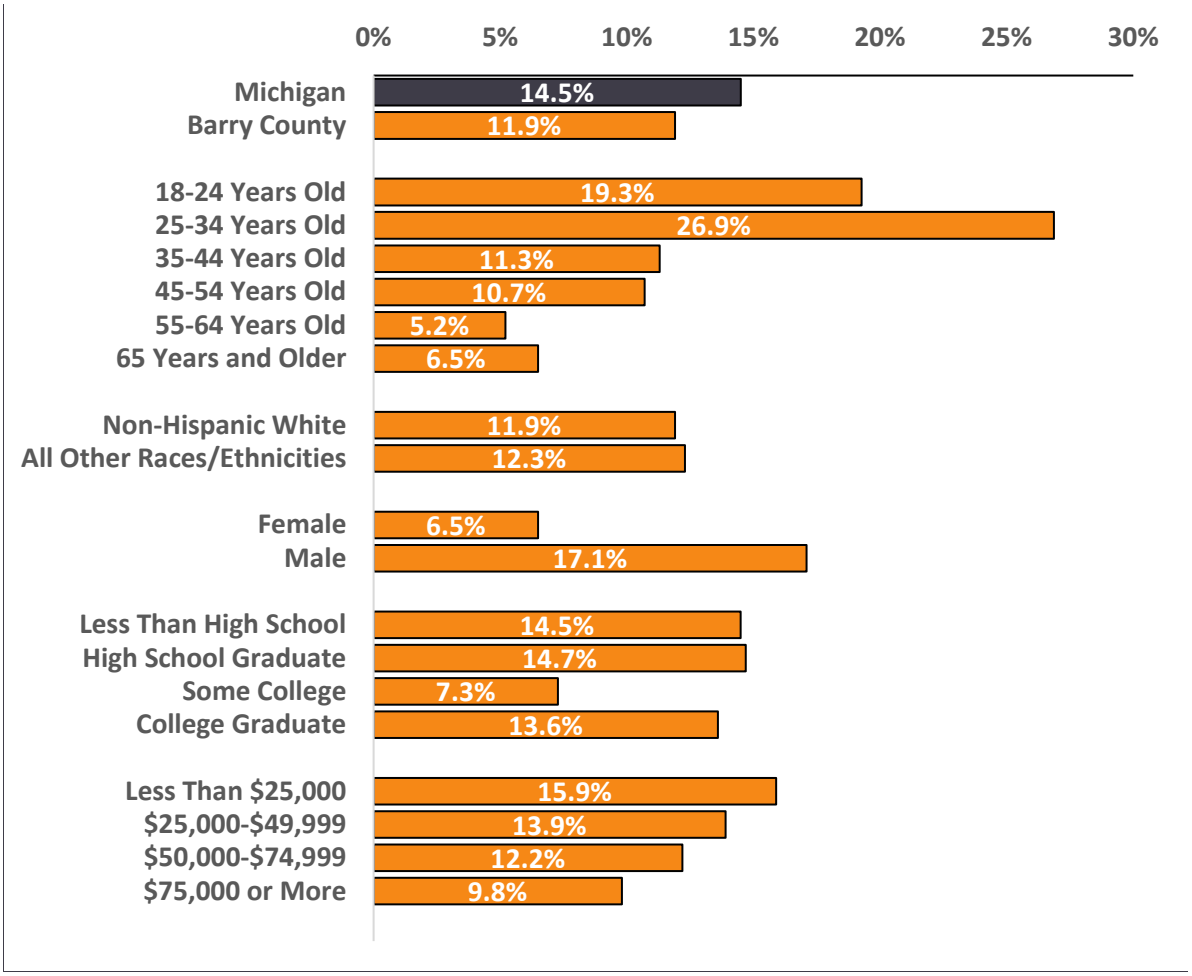
Indicators

- Adults with No Primary Care Provider
- Adults Who Could Not See a Doctor When Needed Due to Costs Within the Past 12 Months
- Adults with No Dental Care Within the Past 12 Months
- Breast Cancer Screening Among Women 40 Years and Older
- Colon Cancer Screening Among Adults 50 Years and Older

Adults with No Primary Care Provider

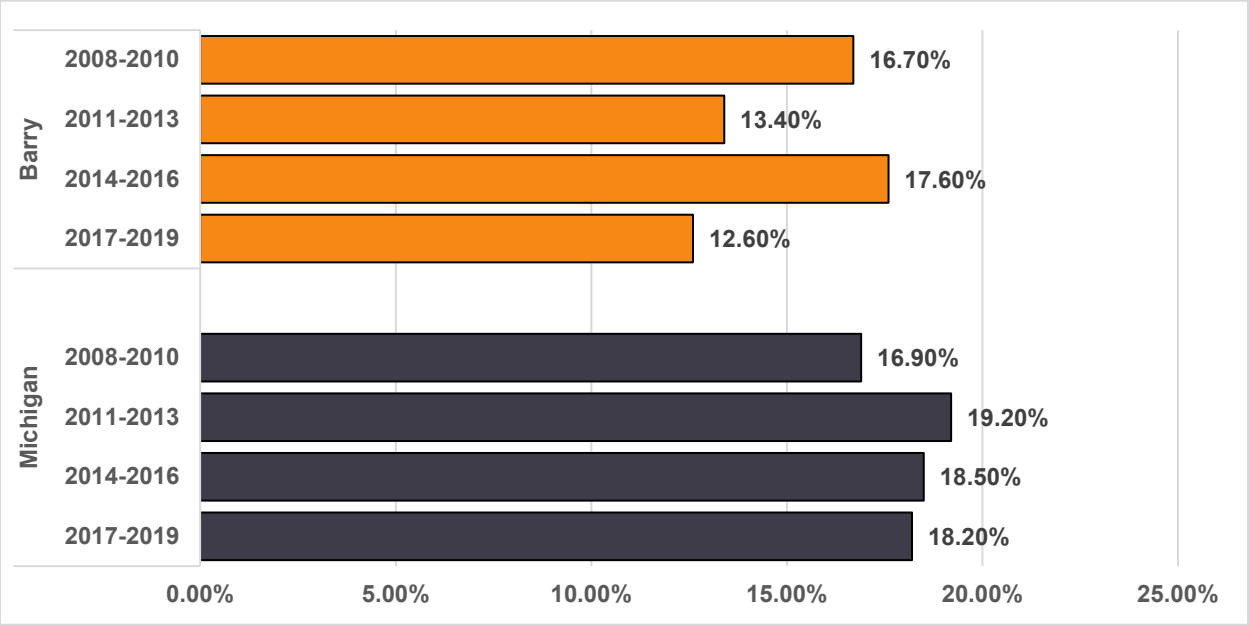
Barry County (11.9%) had fewer adults reporting not having a primary care provider (PCP) than Michigan (14.5%). Eighteen- to 24-year-olds and 25- to 34-year-olds were two to three times more likely to report not having a primary care provider than the other age groups. Males were almost three times more likely to report not having a primary care provider than females. People with some college education were half as likely to report not having a primary care provider compared to other educational attainment groupings. As income levels increased, the percentage of adults reporting not having a primary care provider decreased (Figure 29).[22,23]

Figure 29: Adults with No Primary Care Provider



Sources:
2017-2019 Capital Area Behavioral Risk Factor Survey, Barry County Only
2020 MDHHS Behavioral Risk Factor Survey

Figure 30: Adults with No Primary Care Provider, 2008 - 2019

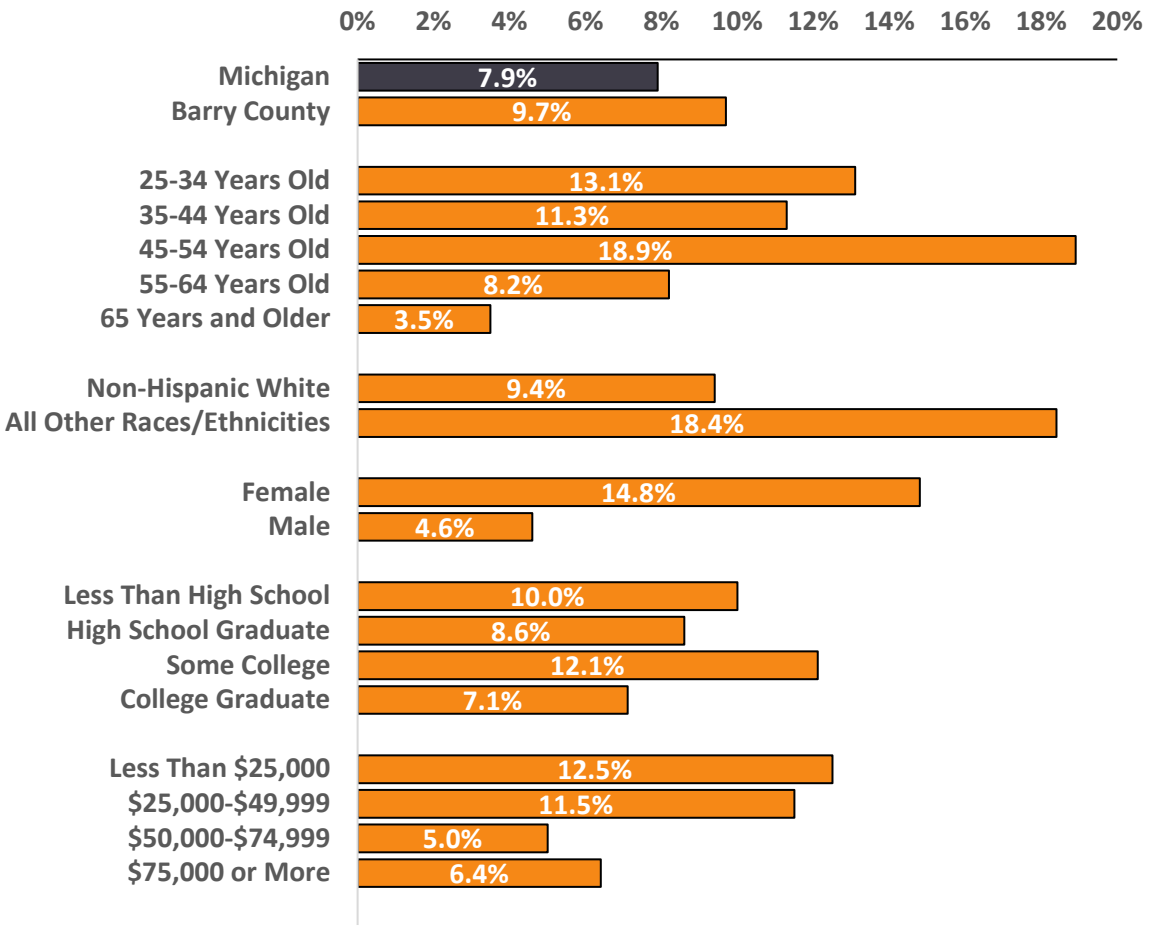


Over the four cycles of the Barry County BRFS, there is a slight downward trend in Barry County in adults who state they do not have a Primary Care Provider (Figure 30). While there is variation over the three-year cycles, the lowest rate in the data collection periods was in the most recent cycle from 2017 to 2019. By comparison, Michigan as a whole has seen an increase in rate of adults who report not having a PCP.

Adults Who Could Not See a Doctor When Needed Due to Costs Within the Past 12 Months

Barry County (9.7%) had more adults reporting that they could not see a doctor when they needed to due to costs than Michigan (7.9%) in the preceding 12 months. Other than the 45- to 54-year-olds (18.9%), as age levels increased, fewer adults reported that they could not see a doctor when needed in Barry County. Non-Hispanic White people were half as likely to report that they could not see a doctor when needed compared to all other races and ethnicities. Females were three to four times as likely to report not seeing a doctor when needed than male residents. Residents with income over $50,000 per year were half as likely to report that they could not see a doctor when needed compared to the three other income levels (Figure 31).[22,23] Those with an income over $75,000 did report slightly higher rates of not being able to seek care when needed due to costs than those making between $50,000 and $74,999.

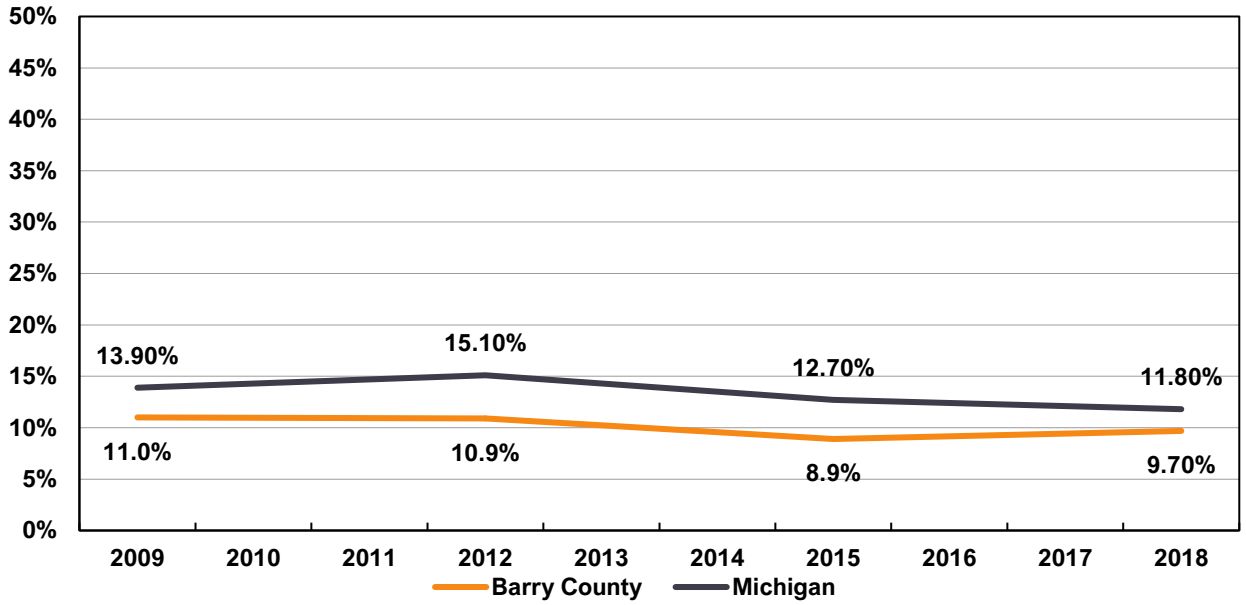
Figure 31: Adults Who Could Not See a Doctor When Needed Due to Costs Within the Past 12 Months



Sources:
2017-2019 Capital Area Behavioral Risk Factor Survey, Barry County Only
2020 MDHHS Behavioral Risk Factor Survey

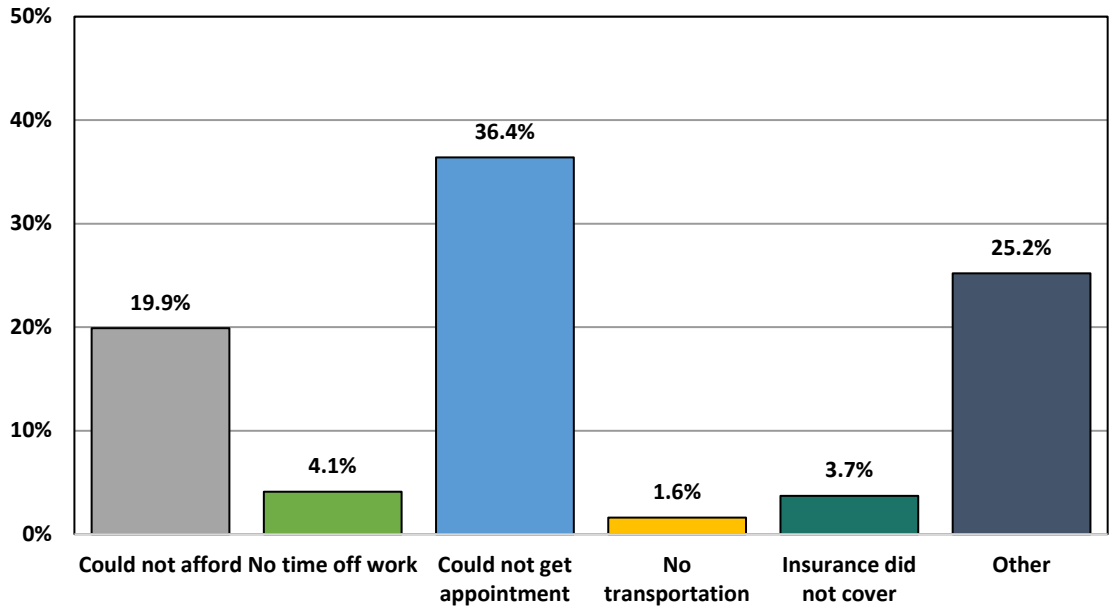
In terms of overall trends, Barry County continues to have lower rates of adults who cannot access health care resources due to cost barriers compared to the state (9.7%, 11.8%, respectively). Both Barry County and Michigan have slight downward trends over the four included survey cycles (Figure 31).

Figure 31: Adults Who Could Not See a Doctor When Needed Due to Costs Within the Past 12 Months, 2009-2018



When asked why they could not access health care needs. BRFS respondents had several responses. Some simply could not afford any aspect of their care. Some could not take the time off work to get the care they need, others had no transportation, and still others did not have insurance that covered their desired service (Figure 32).

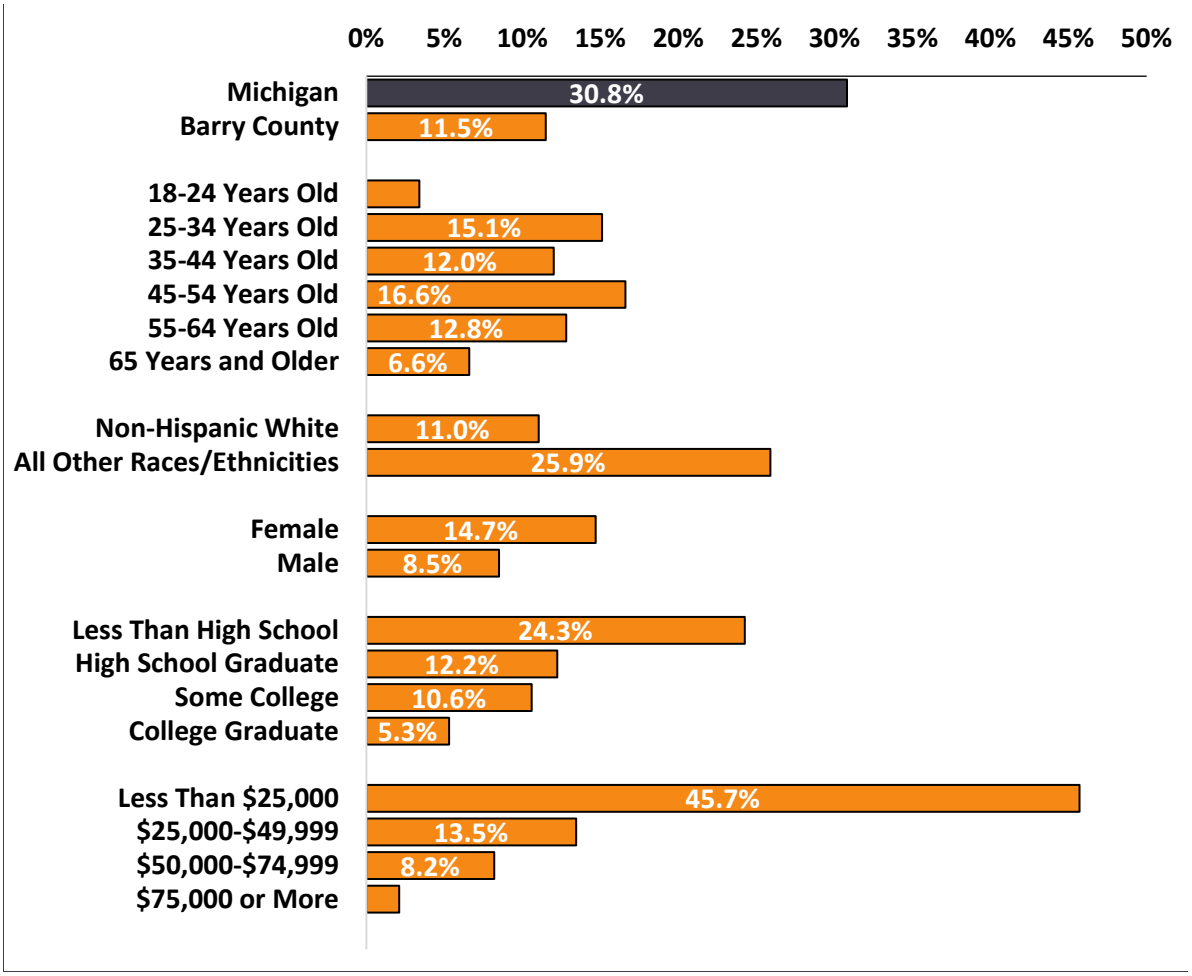
Figure 32: Reasons Adults Could Not Access Health Care, 2017-2019



Adults with No Dental Care Within the Past 12 Months

Barry County (11.5%) had fewer adults reporting not visiting a dentist than Michigan (30.8%) during the past year. Non-Hispanic White people were half as likely to report not visiting a dentist compared to the other races and ethnicities. Males were almost half as likely to report not visiting a dentist. Those with less than a high school education were twice as likely to report not visiting a dentist than high school graduates or those who attended some college, and they were nearly five times more likely than college graduates. Those with a household income less than $25,000 were four to five times more likely to report not visiting a dentist than people those with income above $25,000 (Figure 33).[22,23]

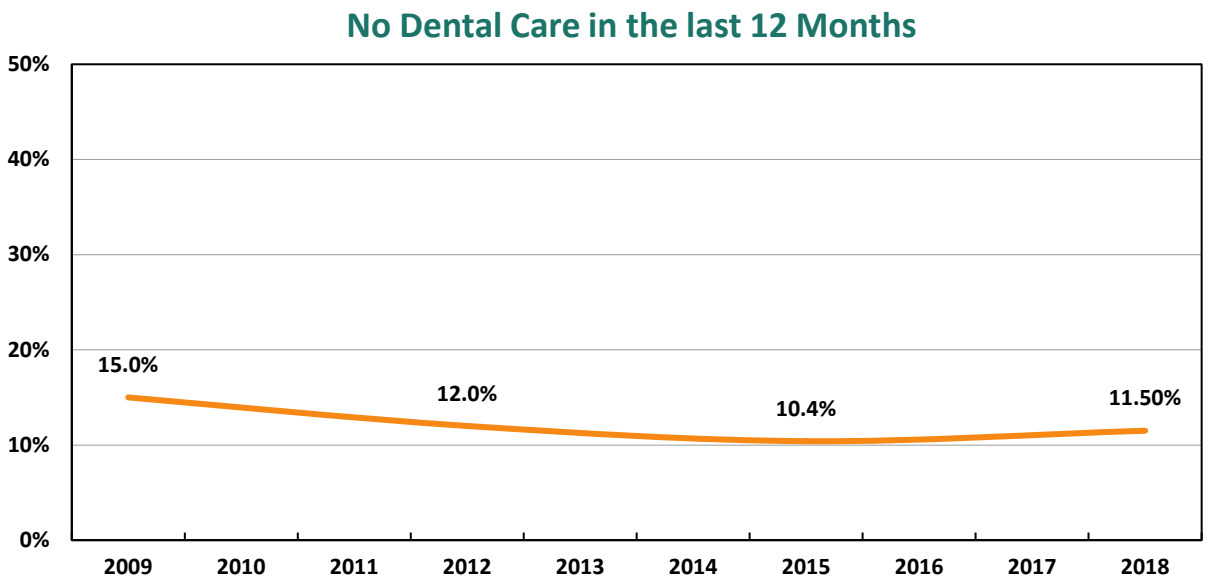
Figure 33: Adults with No Dental Care Within the Past 12 Months



Sources:
2017-2019 Capital Area Behavioral Risk Factor Survey, Barry County Only
2020 MDHHS Behavioral Risk Factor Survey

Over the previous four cycles, the percentage of Barry County residents who did not have any dental care in the previous year decreased from 15% in 2009, to a low of 10.4% in 2015, before slightly increasing in the most recent cycle to 11.5% in 2018 (Figure 34).

Figure 34: Adults with No Dental Care Within the Past 12 Months, 2009-2018

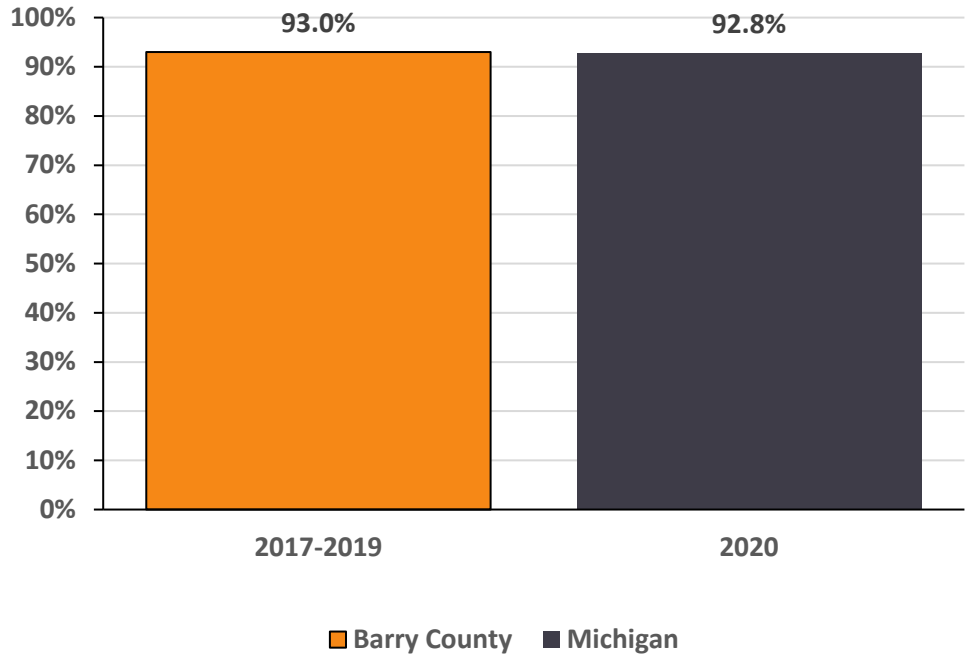


Breast Cancer Screening Among Women 40 Years and Older

In 2018, breast cancer caused 1,488 deaths among Michigan women. Screenings are essential for the early detection of breast cancer. The Centers for Disease Control and Prevention recommends that women who do not have a family history of breast cancer or do not have the genes associated with breast cancer begin screening between 40 and 49 years old.[24]

From 2017 – 2019, 93.0% of women over 40 years of age in Barry County reported ever having a mammography screening. In Michigan, 92.8% of women over age 40 had a screening in 2020 (Figure 34).[22,23] Data regarding mammography screenings was not reported for Michigan in 2019.[25]

Figure 34: Mammography Screening – Ever Had Mammogram, Age 40+ Years

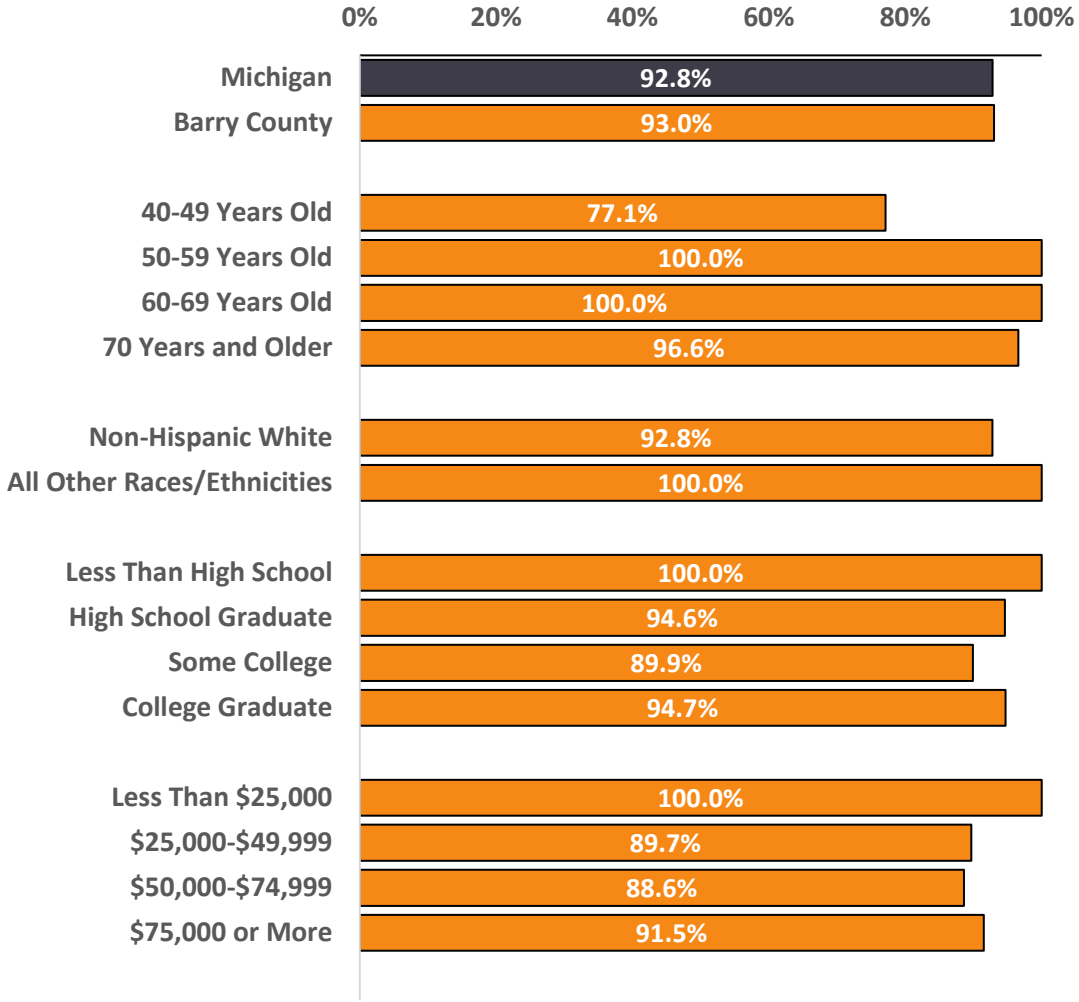


Sources:
2017-2019 Capital Area Behavioral Risk Factor Survey, Barry County Only
2020 MDHHS Behavioral Risk Factor Survey

In Barry County, 93.0% of women over 40 have had a mammogram. Just over three out of four women between the ages of 40 and 49 have had a mammogram. In contrast, 100% of women aged 50 and older reported ever having a mammogram.

Regarding the highest education level attained, the highest percentage of women having a mammogram was found among those with less than a high school education (100.0%); the lowest percentage among those with some college education (89.9%). Women with an income less than $25,000 had the highest percentage of women ever having a mammogram (100.0%) compared to the other income groups (Figure 36).[22,23]

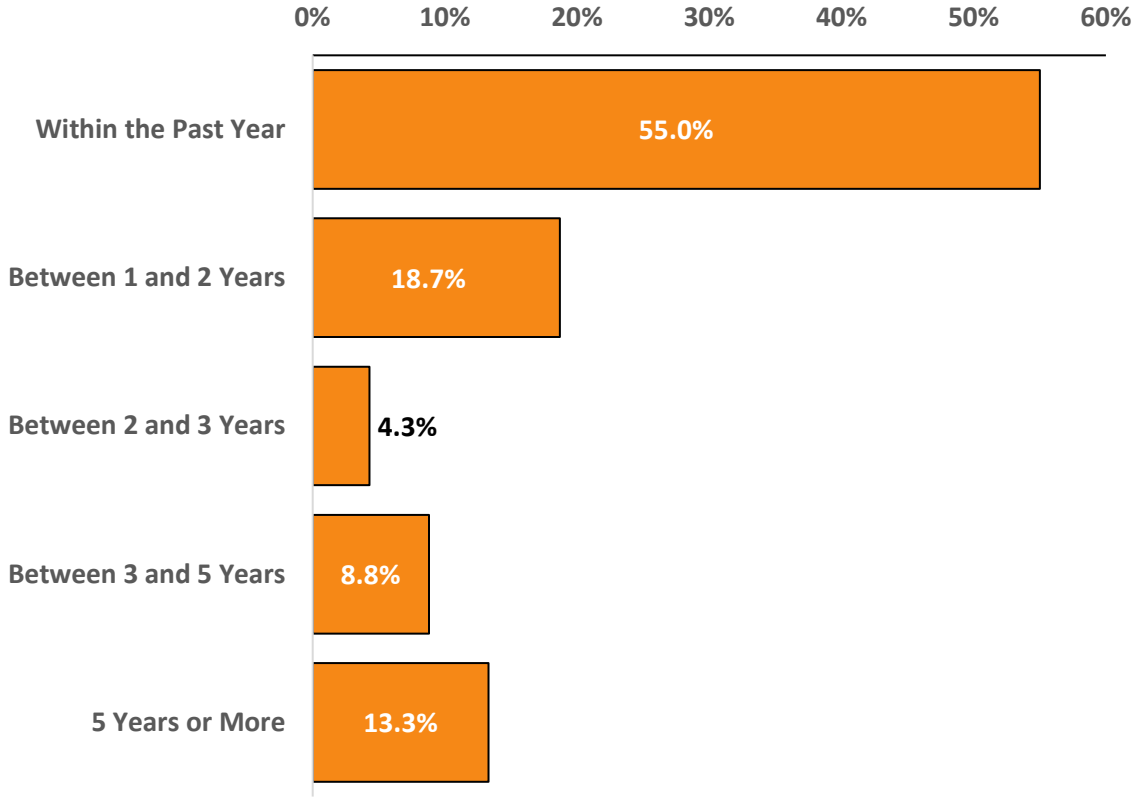
Figure 36: Demographic Characteristics of Women 40 and Older Who Ever Had a Mammogram



Sources:
2017-2019 Capital Area Behavioral Risk Factor Survey, Barry County Only
2020 MDHHS Behavioral Risk Factor Survey

Among women age 40 and older, 55.0% reported having their last mammogram within the past 12 months. 8.8% of women had their last mammogram was between three and five years ago, and 13.3% reported that it had been five years or more since their last screening (Figure 37).[22]

Figure 37: Adult Women Age 40 Years and Older Last Reported Mammogram Screening by Demographic Group, Barry County Residents, 2017-2019



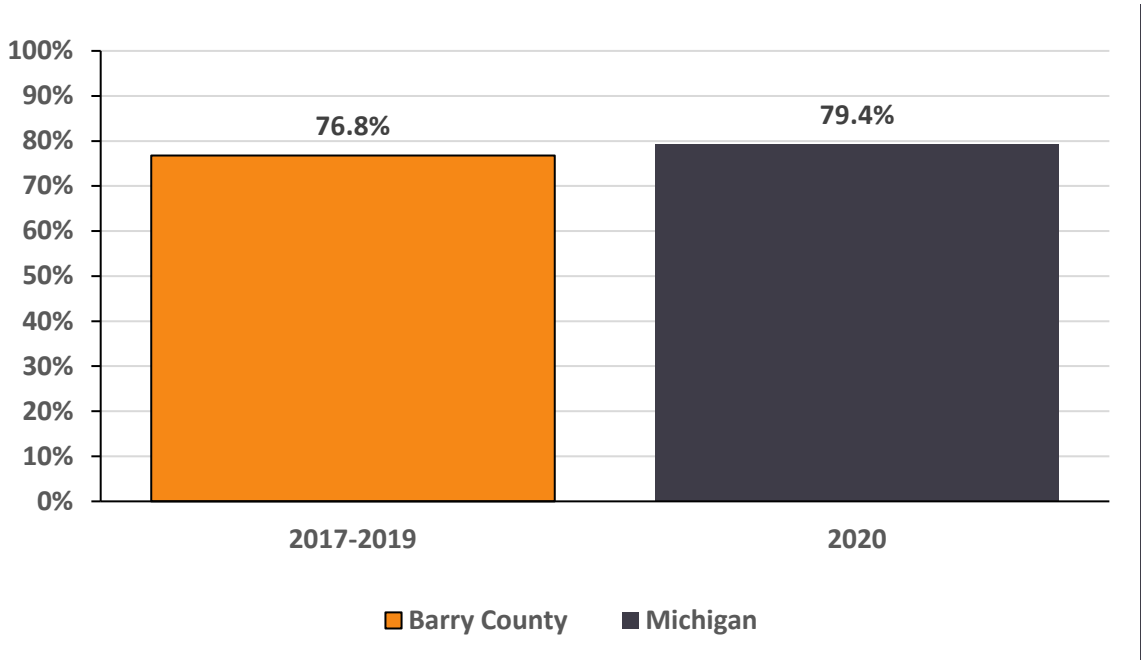
Source: 2017-2019 Capital Area Behavioral Risk Factor Survey, Barry County Only

Colon Cancer Screening Among Adults 50 Years and Older

Colorectal cancer is the second most common cause of cancer death in the United States. When caught early, colorectal cancer is very treatable. Fortunately, colonoscopies are an effective screening tool to detect and, if possible, remove cancerous cells.[26]

The percentage of adults age 50 years and older reporting ever having a colonoscopy/sigmoidoscopy was slightly lower in Barry County (76.8%) than in Michigan (79.4%) (Figure 38).[22,23]

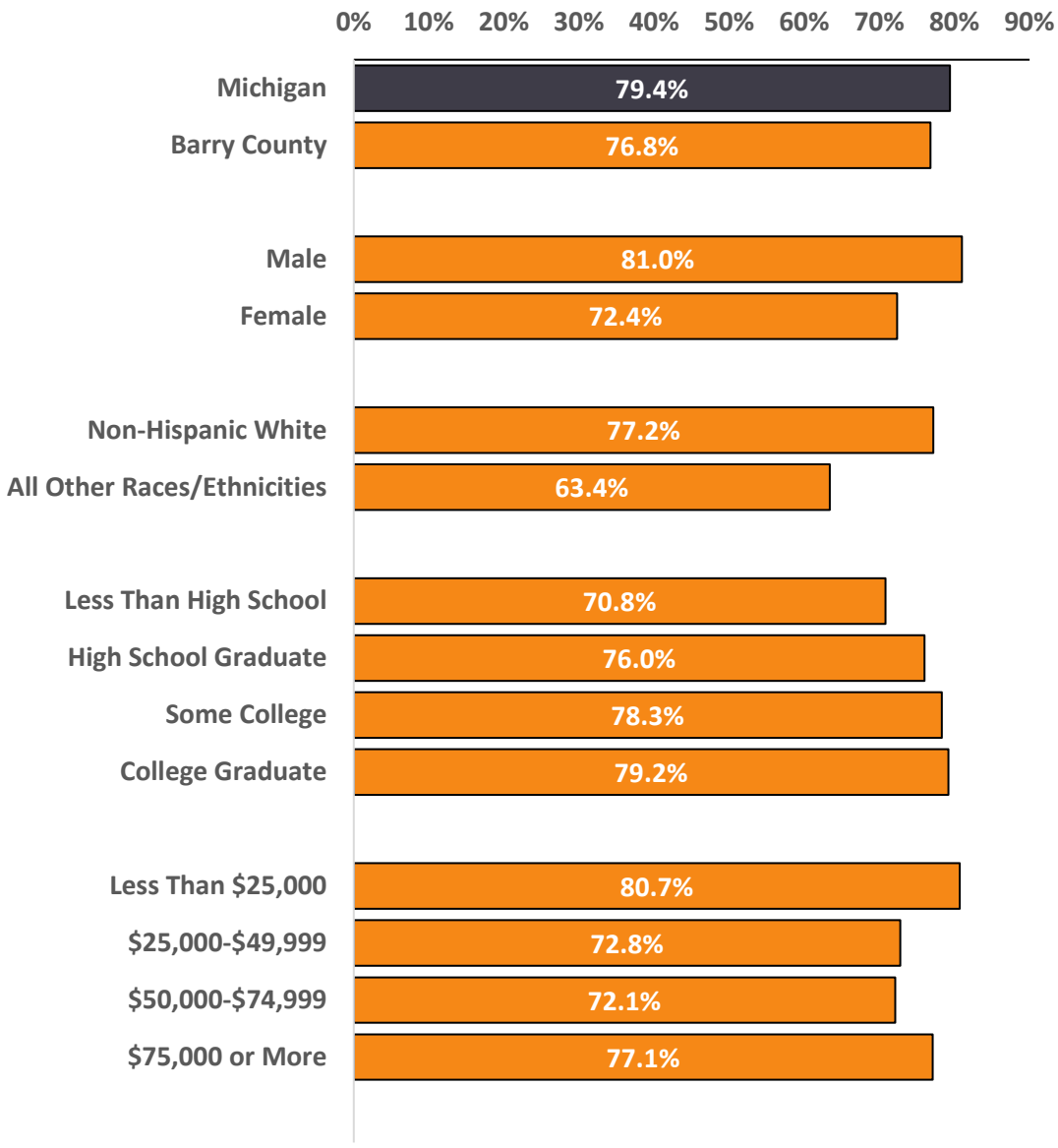
Figure 38: Adults 50 Years Old and Older Who Ever Had a Colonoscopy/Sigmoidoscopy in Barry County and Michigan



Sources:
2017-2019 Capital Area Behavioral Risk Factor Survey, Barry County Only
2020 MDHHS Behavioral Risk Factor Survey

In Barry County, males (81.0%) were more likely than females (72.4%) to ever have a colonoscopy. Non-Hispanic White people (77.2%) had a higher percentage of colonoscopy than all other races and ethnicities combined (63.4%). Residents with less than a high school education were less likely to have a colonoscopy (70.8%) than the other education levels. Adults 50 years and older with an income less than $25,000 (80.7%) were more likely to have ever had a colonoscopy than the other income levels. (Figure 39).[22,23]

Figure 39: Demographic Characteristics of Adults 50 Years and Older Who Ever Had a Colonoscopy/Sigmoidoscopy



Sources:
2017-2019 Capital Area Behavioral Risk Factor Survey, Barry County Only
2020 MDHHS Behavioral Risk Factor Survey

Financial Security and Economic Stability

According to the International Committee of the Red Cross, financial security or economic stability is defined as the "ability of individuals, households or communities to cover their essential needs sustainably and with dignity."[27] Income and health have a strong association with each other. Poverty is strongly associated with increased morbidity and mortality. Poor health will likely cause a person to miss work, resulting in a reduced income.[28]

Indicators

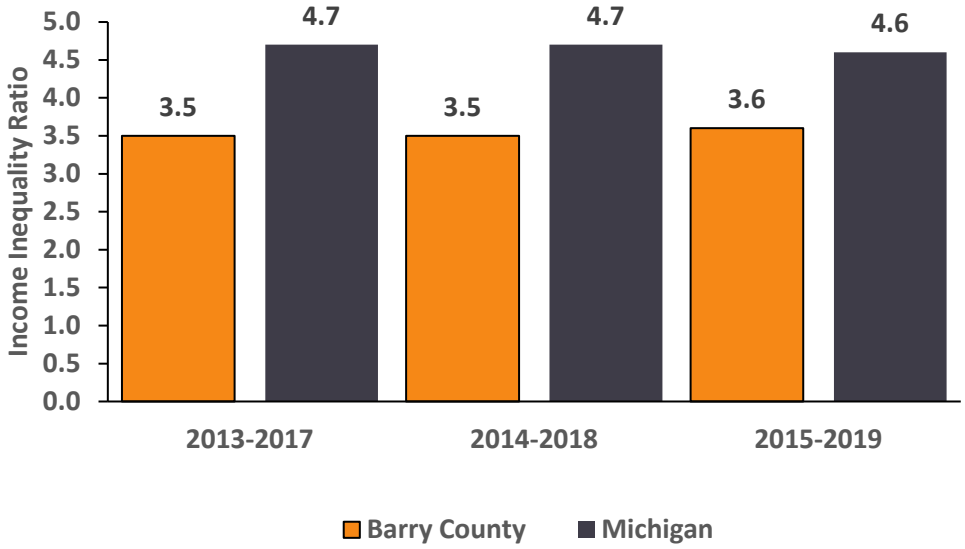
- Income Inequality
- Households Below ALICE Threshold
- Households Who Spend More Than 30% of Their Income on Housing
- Food Insecurity

Income Inequality

Income inequality has been shown to increase the prevalence of poverty, increase stress, reduce the sense of community and harm health.[29] In Figure 40, the income inequality ratio is defined as the ratio of household income at the 80th percentile to household income at the 20th percentile. An important aspect of income inequality is that it does not relate to high- or low-income levels. it is strictly looking at the ratio of the highest earners and lowest earners.

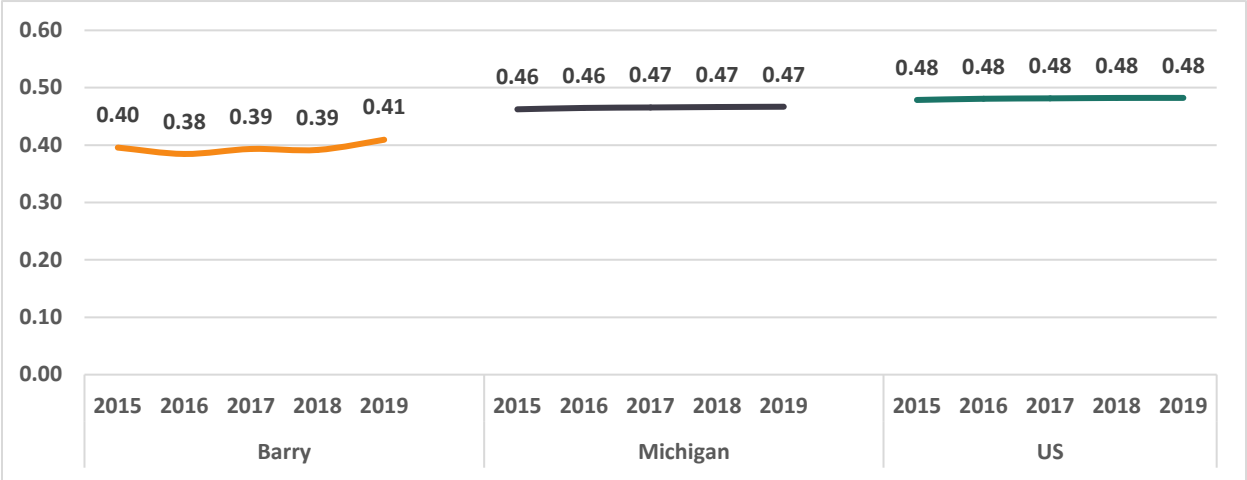
In Barry County, the income inequality ratio was lower (3.5 to 3.6) than in Michigan (4.6 to 4.7) across all three, five-year periods. Across the three periods, the income inequality ratio was stable for Barry County and Michigan.[30]

Figure 40: Income Inequality Ratio



Source: 2019-2021 County Health Rankings

Figure 41: Income Inequality Ratio, 2015-2019



Source: American Community Survey, 5-year estimates

Households Below ALICE Threshold

An acronym for Asset Limited, Income Constrained and Employed, ALICE, is the households with income above the federal poverty level but below the basic cost of living. The ALICE Threshold "represents the minimum income level necessary for *survival* for a household" and includes those below the Federal Poverty Level (FPL) and those above the FPL but not making enough income to meet basic needs.[31] The Household Survival Budget is the bare-minimum costs of basic necessities, including housing, child care, food, transportation, health care and a smartphone plan.

In Barry County, the annual Household Survival Budget is $24,288 per single adult, $35,196 for two adults, and between $53,988 and $66,108 for a family of two adults and two children (Table 11).[32]

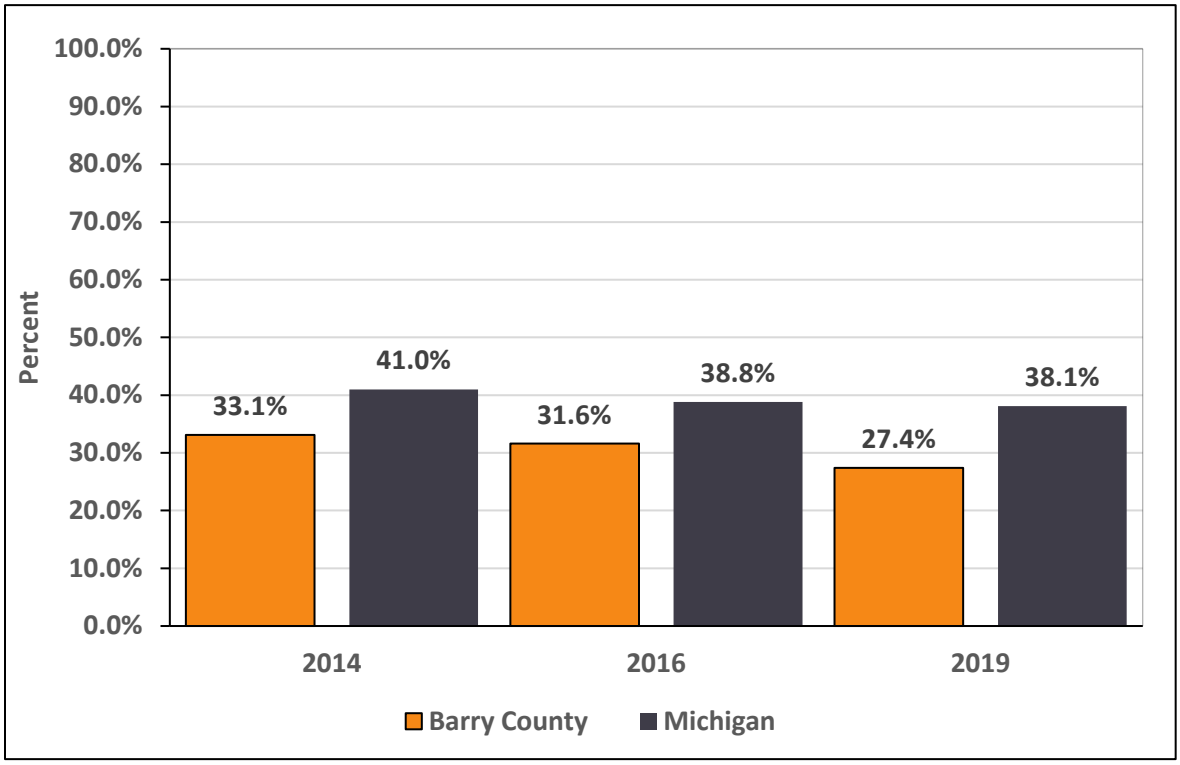
Table 11: *ALICE Household Survival Budget, Barry County, 2019*

	Single Adult	One Adult, One Child	One Adult, One in Child Care	Two Adults	Two Adults, Two Children	Two Adults, Two in Child Care	Single Senior	Two Seniors
Housing	$634	$696	$696	$696	$894	$894	$634	$696
Child Care	$0	$216	$649	$0	$431	$1,224	$0	$0
Food	$227	$395	$330	$473	$792	$691	$196	$404
Transportation	$457	$606	$606	$647	$929	$929	$406	$545
Health Care	$189	$403	$403	$403	$569	$569	$455	$909
Technology	$55	$55	$55	$75	$75	$75	$55	$75
Miscellaneous	$184	$265	$310	$267	$409	$501	$203	$301
Taxes	$278	$283	$364	$372	$400	$626	$287	$379
Monthly Total	$2,024	$2,919	$3,413	$2,933	$4,499	$5,509	$2,236	$3,309
Annual Total	$24,288	$35,028	$40,956	$35,196	$53,988	$66,108	$26,832	$39,708
Hourly Wage	$12.14	$17.51	$20.48	$17.60	$26.99	$33.05	$13.42	$19.85

Source: *ALICE Household Survival Budget – Barry County, Michigan, 2019, United Way of Northern New Jersey, United for Alice*

The percentage of households below the ALICE Threshold in Barry County was lower than in Michigan in 2014, 2016 and 2019. The percentage of households below the ALICE Threshold in Barry County declined from 2014 to 2019 (from 33.1% to 27.4%) and Michigan (from 41.0% in 2014 to 38.1% in 2019) declined from 2014 to 2019 (Figure 42).[30]

Figure 42: Percentage of Households Below ALICE Threshold



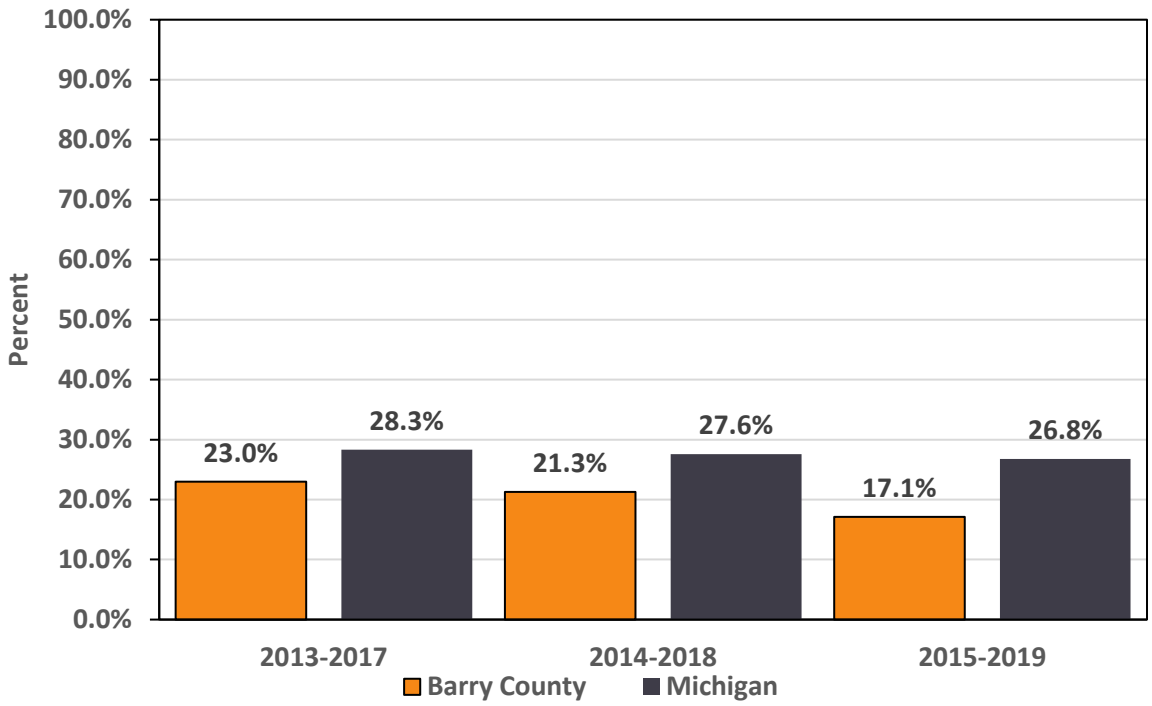
Source: ALICE in Michigan: A Financial Hardship Study – Barry County, Michigan, 2019, Michigan Association of United Ways

Households That Spend More Than 30% of Their Income on Housing

The percentage of households that spend more than 30% of their income on housing was lower in Barry County than in Michigan across the three, rolling five-year periods. From 2013-2017 to 2015-2019, the percentage of households that spent more than 30% of their income on housing declined in Barry County (from 23.0% to 17.1%) and in Michigan (from 28.3% to 26.8%) (Figure 43).[33-35]

Note: This does not include any data from during or after the COVID-19 pandemic. The cost and availability of housing has been significantly impacted by the pandemic and other outside factors.

Figure 43: Percentage of Households That Spend More Than 30% of Their Income on Housing

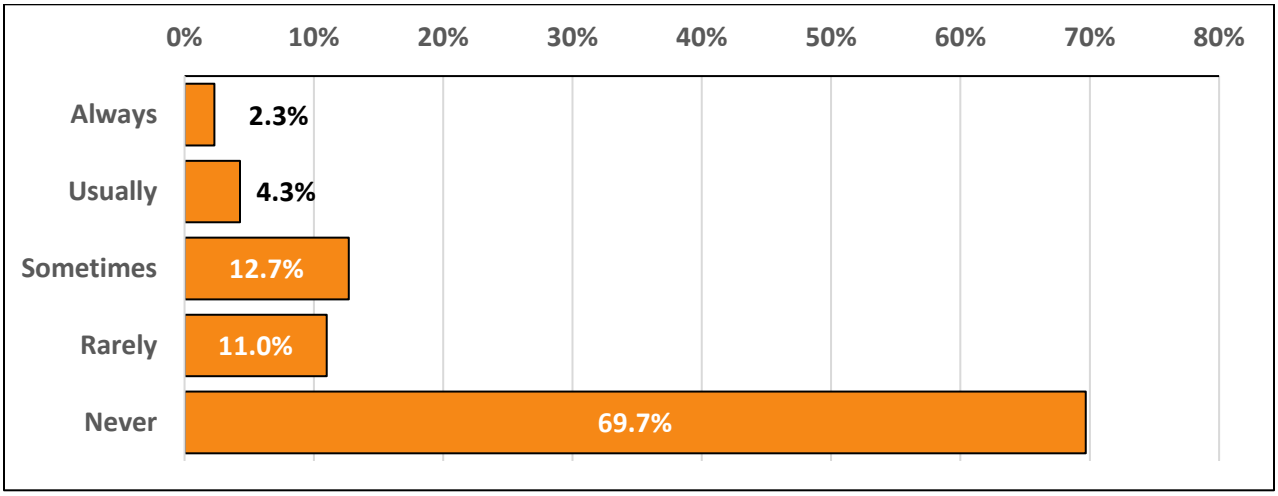


Source: U.S. Census Bureau: 2017-2019 American Community Survey 5-Year Estimates, Table S2503

Food Insecurity

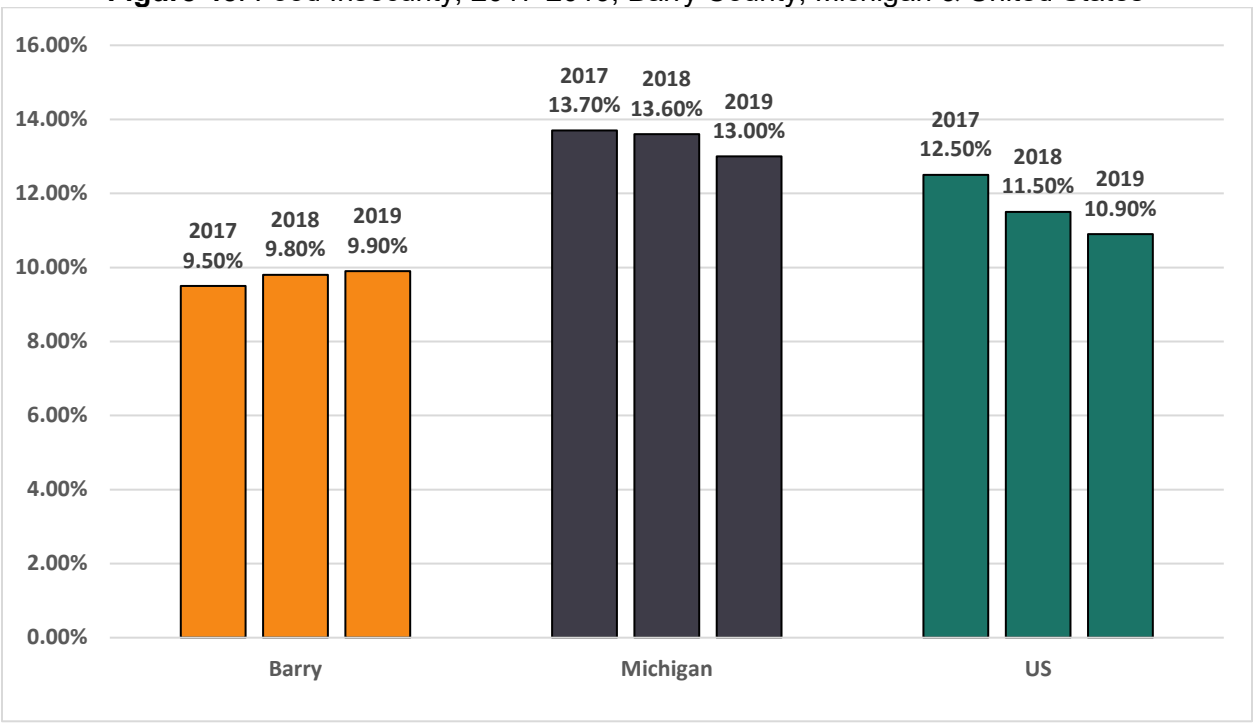
The majority of adults in Barry County were never worried or stressed about having enough money to buy nutritious meals in the past 12 months between 2017 and 2019. However, 2.3% of adults were always, and 4.3% of adults were usually stressed about having enough money for these purchases (Figure 44).[22] According to Feeding America, Barry County saw a slight increase in those who were food insecure between 2017 and 2019 while Michigan and the US saw decreasing rates. Even though the rates in Michigan and nationally have decreased, Barry County still had lower overall rates of food insecurity according to Feed America (Figure 45).

Figure 44: Adults Worried or Stressed About Having Enough Money to Buy Nutritious Meals



Source: 2017-2019 Capital Area Behavioral Risk Factor Survey, Barry County Only

Figure 45: Food Insecurity, 2017-2019, Barry County, Michigan & United States



Education

Education is vital to improving the health of a community. Increased access to quality education and educational attainment helps promote health equity and reduces disparities. Quality education can lead to better opportunities that increase income and improve overall health.

Indicators

- Adults Age 25 and Older with a Bachelor's Degree or Higher

Adults 25 Years of Age and Older with a Bachelor's Degree or Higher

Those who have attained a bachelor's degree or higher have better health and economic outcomes than those who have completed high school or some college. Figure 46 shows the percentage of adults with a bachelor's degree or higher.

The percentage of adults age 25 and older with a bachelor's degree or higher was significantly lower in Barry County (19.5% to 21.1%) than in Michigan (28.1% to 29.1%) over the three, five-year periods. However, for both Barry County and Michigan, the percentage of adults age 25 and older with a bachelor's degree or higher slightly increased over the three, five-year periods.[36-38]

Figure 46: Adults with a Bachelor's Degree or Higher, Age 25+ Years

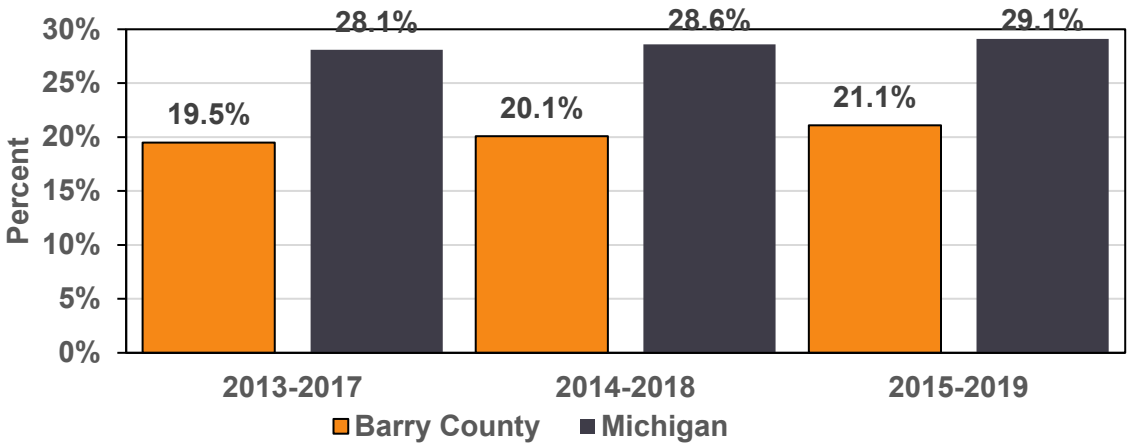
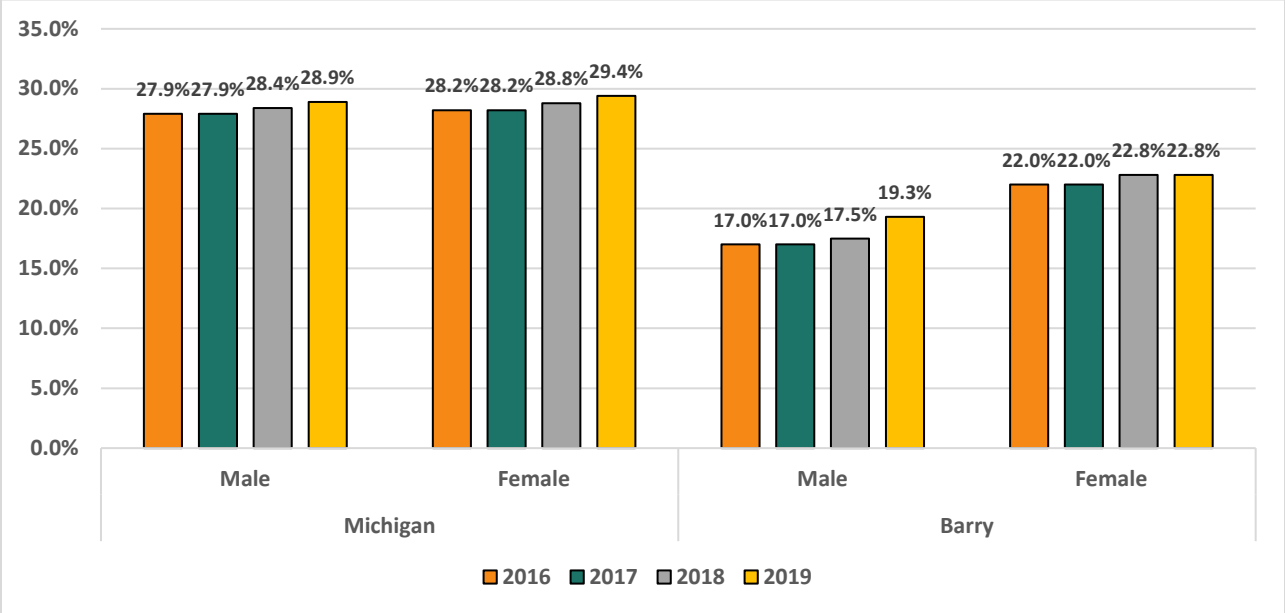


Figure 47: Adults with a Bachelor's Degree or Higher, by Gender, 2016-2019



Source: U.S. Census Bureau: 2017-2019 American Community Survey 5-Year Estimates, Table S1501

Environmental Quality

The environment has a significant impact on health. The World Health Organization estimated that globally, "24% of the disease burden (healthy life years lost) and an estimated 23% of all deaths (premature mortality) was attributable to environmental factors."[39] According to Healthy People 2020, "poor environmental quality has its greatest impact on people whose health status is already at risk."[40]

Indicators

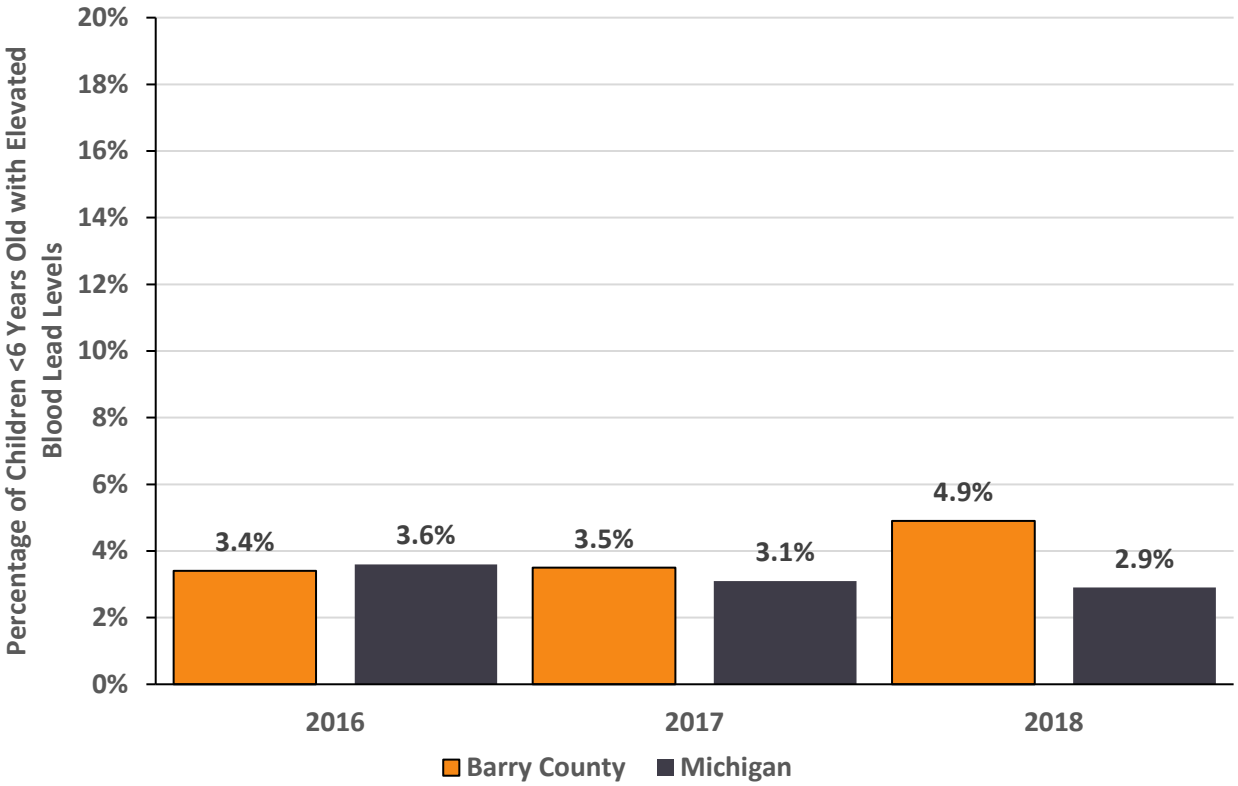
- Elevated Blood Lead Levels Among Children 6 Years and Younger
- Air Pollution (PM2.5)

Elevated Blood Lead Levels Among Children 6 Years and Younger

Exposure to sources of lead from touching, swallowing, or breathing in lead or lead dust, has produced adverse effects, especially in children. There is no safe blood lead level identified in children. Lead exposure has many potential consequences including causing damage to the brain and nervous system and slowing growth and development in children. These adverse effects can cause learning and behavior problems, as well as hearing and speech problems.[41] Lead exposure can come from various sources, including lead in water pipes, lead dust from lead paint, and lead dust in the soil around the house. An elevated blood lead level is defined as having a blood lead level of ≥ 5 µg/dL.[42]

The percentage of children 6 years of age and under with elevated blood lead levels was lower in Barry County than in Michigan in 2016. However, since 2016, the percentage of children with an elevated blood lead level has been higher in Barry County (3.5% in 2017 and 4.9% in 2018) than in Michigan (3.1% in 2017 and 2.9% in 2018) (Figure 48).[42]

Figure 48: Percentage of Children 6 Years and Younger with Elevated Blood Lead Levels



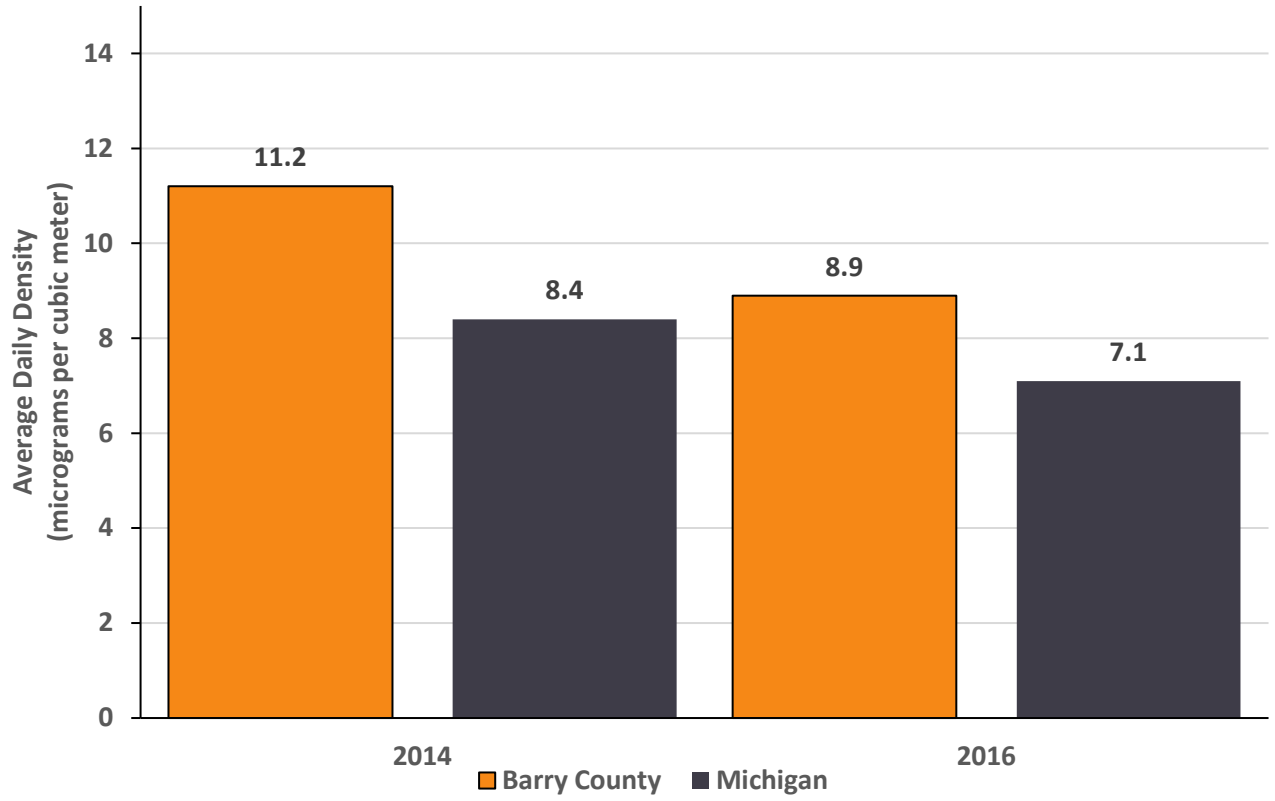
Source: Annual Data Report on Childhood Blood Lead Testing in Michigan, Michigan Department Health and Human Services, 2018

Air Pollution—Particulate Matter

Poor air quality and pollution harm health and may lead to chronic bronchitis, decreased lung function, asthma and other adverse effects. In Figure 49, air pollution is defined as the average daily density of fine particulate matter in micrograms per cubic meter (PM2.5). PM2.5 can come from a variety of sources—traffic, coal-fired power plants, industry and more—and although some particulates are emitted directly from these sources, much of it forms in the air when chemicals, such as sulfates, nitrates and volatile organics, react or condense to form fine particles.[43]

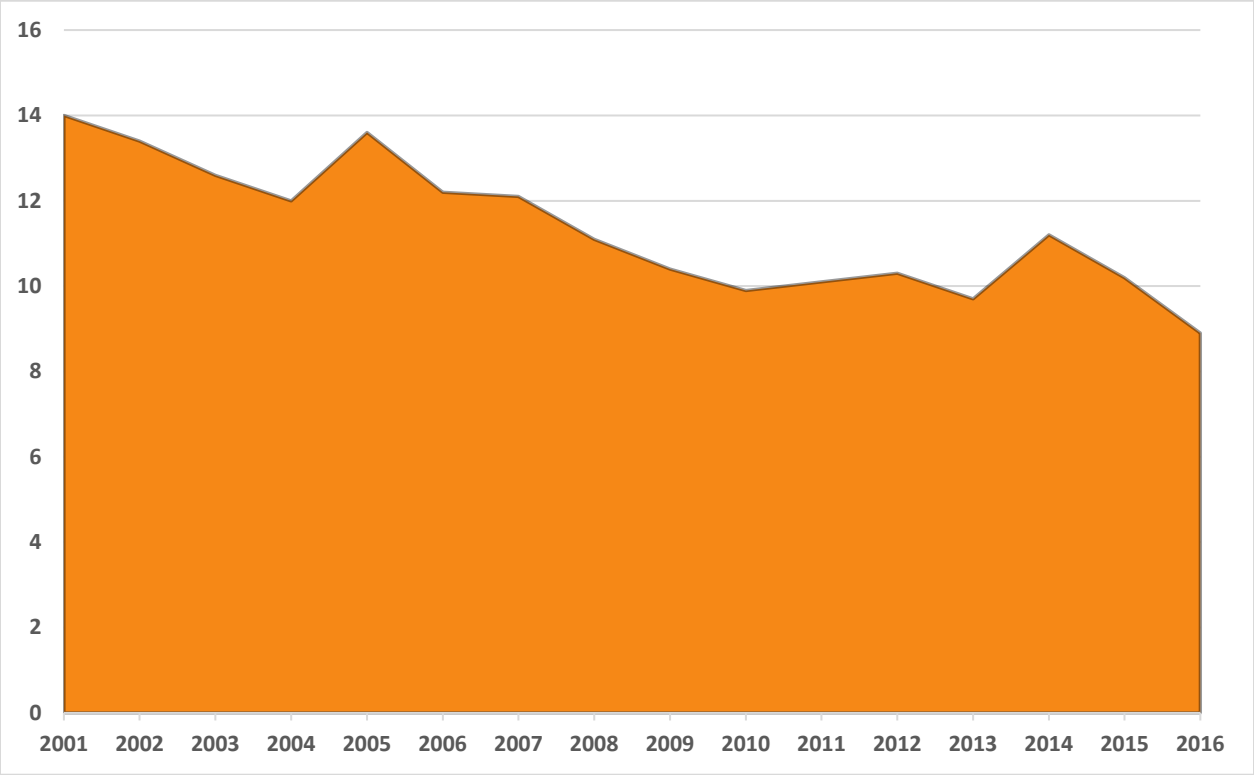
Between 2014 and 2016, the average daily density of fine particulate matter in micrograms per cubic meter was higher in Barry County (11.2 in 2014 and 8.9 in 2016) than in Michigan (8.4 in 2014 and 7.1 in 2016). However, the average daily density of fine particulate matter has decreased over the same period in Barry County and Michigan (Figure 50).[44]

Figure 50: Air Pollution – Particulate Matter



Source: 2014-2016 CDC Tracking Network

Figure 51: Average Annual Ambient Concentrations of PM2.5, Modeled Data, 2001-2016, Barry County



Built Environment and Transportation

Safe and affordable housing, neighborhoods and built environments shape lives and affect residents' health. Poor housing conditions, air quality and water quality, and limited access to healthy foods can lead to injuries, poor health, and poor outcomes.[45,46]

Motorized vehicle transportation contributes to morbidity and mortality. Increased driving leads to an increased risk of an accident, mental stress, physical inactivity and air pollution, which can be detrimental to people's overall health and well-being.[47]

Indicators

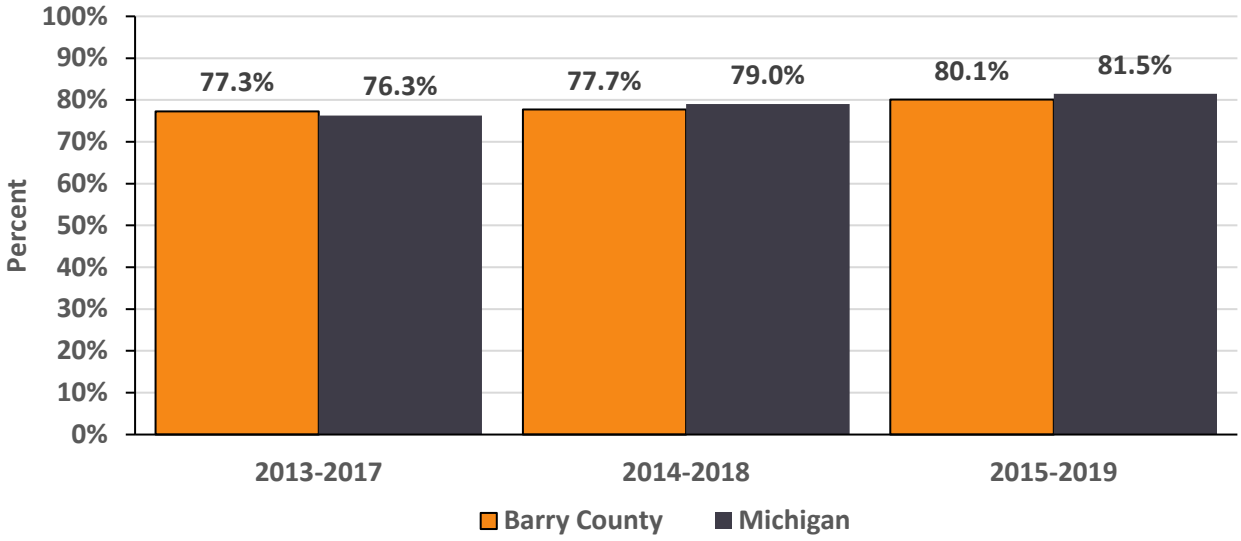
- Broadband Internet Subscriptions
- Transportation Accidents

Broadband Internet Subscription

Broadband internet access is a social determinant of health and affects the health and quality of life of an individual and household. People without broadband internet are likely to have poor health outcomes and lower quality of education. Health care delivery via telemedicine, health literacy and disease prevention efforts can be limited without broadband internet.[48] Studies have shown that students without broadband internet had trouble completing schoolwork.[49] Figure 52 shows the percentage of households with a broadband internet subscription.

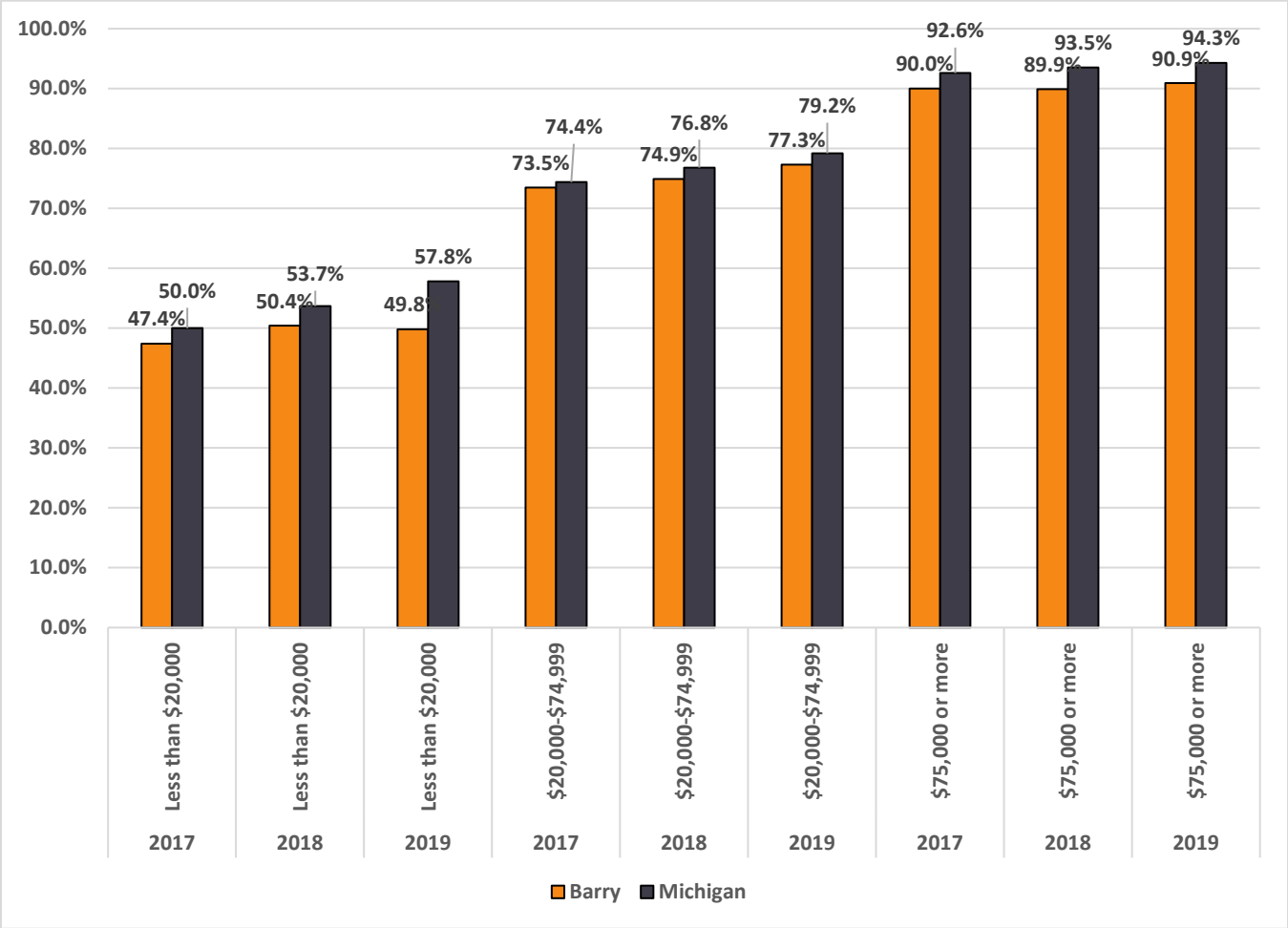
The percentage of households with broadband internet was lower in Barry County than in Michigan during the 2014-2018 and 2015-2019 periods. From 2013-2017 to 2015-2019, households with broadband internet increased in Barry County (from 77.3% to 80.1%) and Michigan (from 76.3% to 81.5%).[50-52]

Figure 52: Broadband Internet Subscription



Source: U.S. Census Bureau: 2017-2019 American Community Survey 5-Year Estimates, Table S2801

Figure 53: Percent of Households with Any Broadband Internet by Income Level, 2017-2019



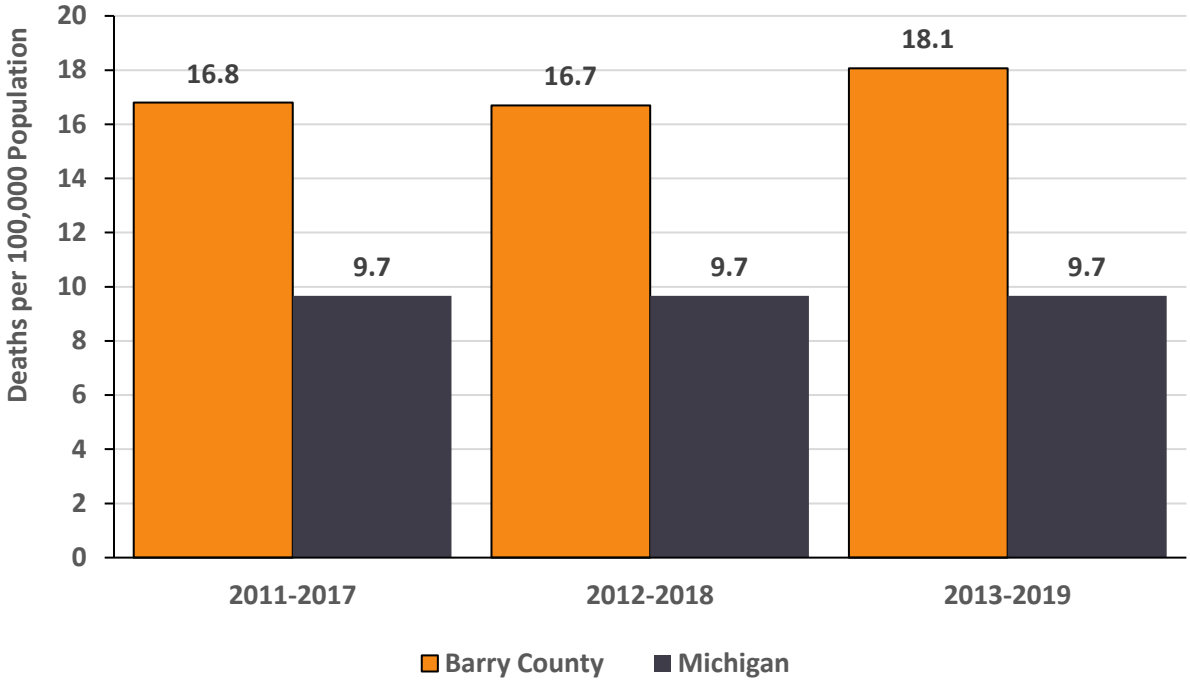
A more in-depth picture of broadband access shows that those with the lowest incomes are least likely to have access to high-speed broadband internet. Between 2017 and 2019, the percentage of households in Barry County making less than $20,000 had lower rates of access compared to Michigan, and only saw small increases in access when compared to the state over the same time period. Access to broadband internet for those households with income less than $20,000 is critical to support potential job functions, employment searches, and if they have children in school who require access to the internet.

Motor Vehicle Crash Deaths per 100,000 Population

In Figure 54, the number of motor vehicle crashes resulting in death is defined as the number of motor vehicle crash deaths per 100,000 population.

The number of motor vehicle crash deaths per 100,000 population was higher in Barry County (16.7-18.1 deaths per 100,000 population) than in Michigan (9.7 deaths per 100,000 population) over the three, four-year periods. The number of deaths per 100,000 remained steady in Michigan; however, there was an increase in Barry County from 2012-2018 to 2013-2019.[53]

Figure 54: Motor Vehicle Crash Deaths per 100,000 Population



Source: 2011-2017 through 2013-2019 CDC Wonder

Social Connection and Capital

Healthy People 2030 defines social and community context as the "connection between characteristics of the contexts within which people live, learn, work, and play and their health and well-being."[54] According to the Robert Wood Johnson Foundation, people with an increased "sense of security, belonging, and trust in their community have better health. People who don't feel connected are less inclined to act in healthy ways or work with others to promote well-being for all."[55]

Indicators

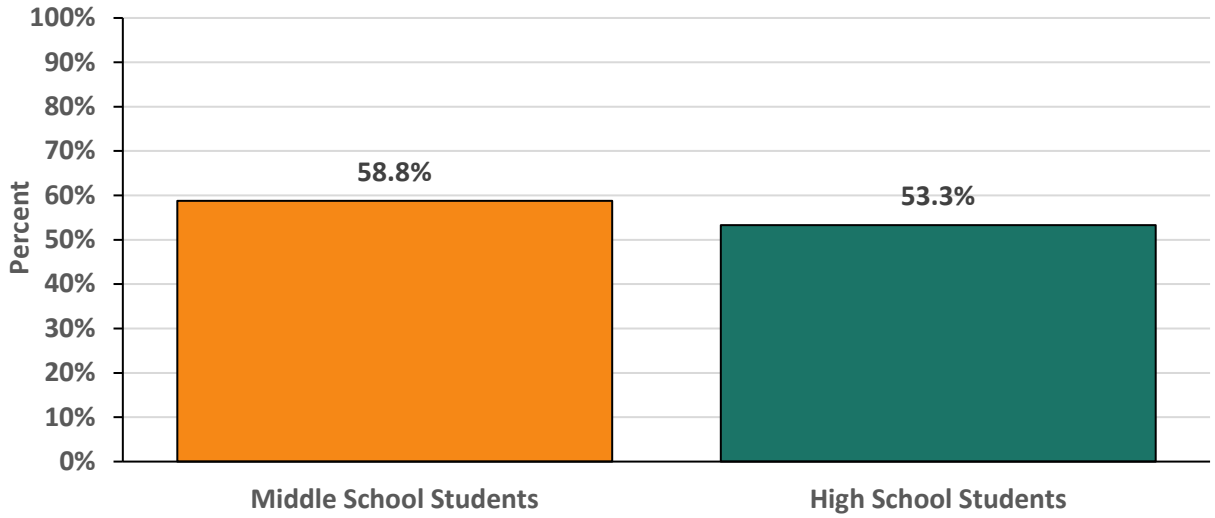
- Adolescents Who Know Adults in the Neighborhood They Could Talk to About Something Important

Adolescents Who Know Adults in the Neighborhood They Could Talk to About Something Important

Non-parent adults who are positive and supportive can contribute to an adolescent's self-esteem, problem-solving behavior and overall resilience. Research has shown that adolescents with positive support from non-parental adults have a better attitude toward school, increased academic achievements, and fewer behavioral and emotional problems.[56, 57]

In 2017, the percentage of high school students in Barry County who knew adults in the neighborhood they could talk to about something important was 53.3%, and the percentage among Barry County middle school students was 58.8% (Figure 55).[58]

Figure 55: Adolescents Who Know Adults in the Neighborhood They Could Talk to About Something Important, 2017-2018



Source: 2017-2018 County Reports—School Health Survey, Michigan Department of Education

Morbidity & Mortality

Mortality

Mortality data are excellent indicators of the general health of and life expectancy in a community. In addition to looking at life expectancy, mortality data can be used to identify important or concerning patterns in a community, including trends in the leading causes of death or premature death rates.[59]

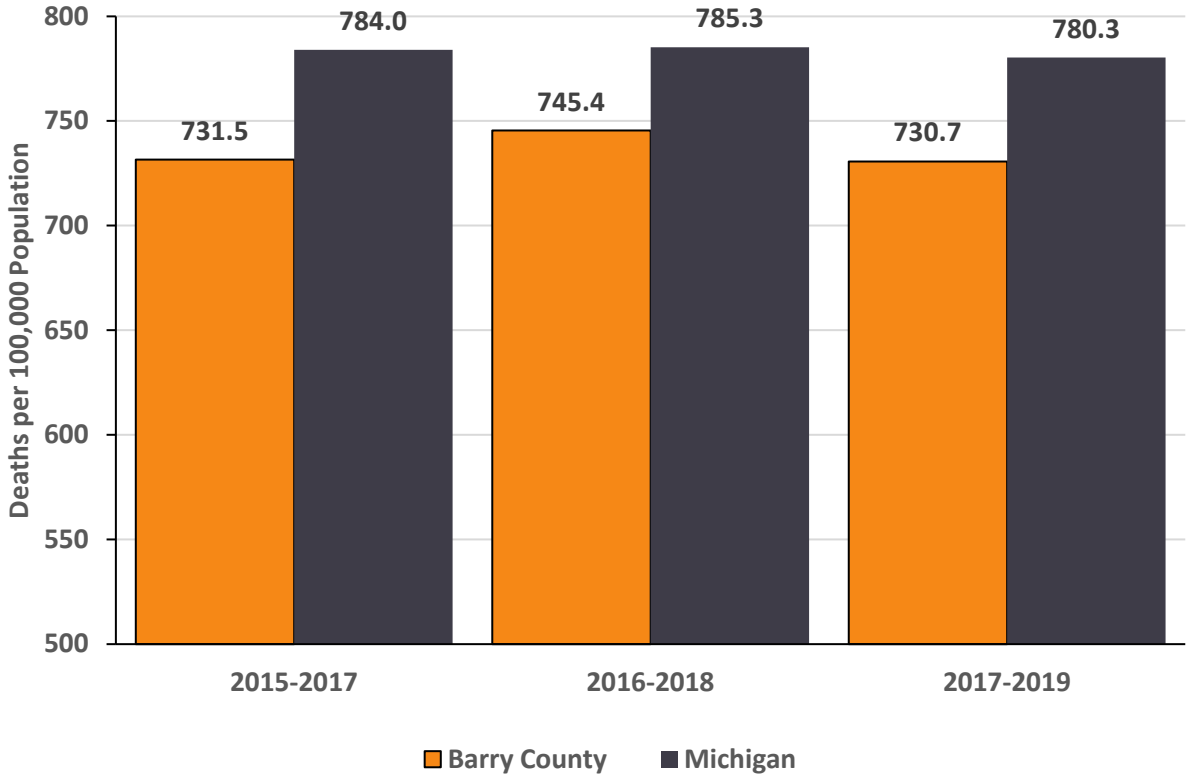
Indicators

- Age-Adjusted Mortality Rate
- Leading Causes of Death
- Premature Death Rate
- Suicide Rate

Age-Adjusted Mortality Rate

The three-year, age-adjusted mortality rate per 100,000 population was significantly lower in Barry County than in Michigan across the three periods. The age-adjusted deaths per 100,000 population remained steady for Barry County (between 730.7 and 745.4 deaths per 100,000 population) and Michigan (between 780.3 and 785.3 deaths per 100,000 population), over 2015-2017 to 2017-2019 (Figure 56).[60]

Figure 56: Age-Adjusted Mortality Rates per 100,000 Population



Source: Community Health Information – Mortality, Michigan Department of Health and Human Services, Division for Vital Records and Health Statistics.

Leading Causes of Death

The most common cause of death in Barry County (between 165.3 and 170.9 deaths per 100,000 population) and Michigan (between 195.0 and 198.0 deaths per 100,000 population) was heart disease. The second most common cause of death for both Barry County (between 151.9 and 168.6 deaths per 100,000 population) and Michigan (159.7 and 164.9 deaths per 100,000 population) was cancer (Table 12).[60]

Table 12: ***Leading Causes of Death – Age-Adjusted Rates per 100,000 Population***

	Barry County			Michigan		
	2015-2017	**2016-2018**	**2017-2019**	**2015-2017**	**2016-2018**	**2017-2019**
All Causes of Death	731.5	745.4	730.7	784.0	785.3	780.3
Heart Disease	165.3	167.6	170.9	198.0	197.4	195.0
Cancer	168.6	166.9	151.9	164.9	163.1	159.7
Chronic Lower Respiratory Diseases	50.8	50.3	52.3	45.4	44.4	44
Unintentional Injuries	39.7	40.8	45.6	49.4	52.3	51.8
Stroke	35.1	40.6	40.0	38.5	39.5	39.5
Alzheimer's Disease	36.8	41.1	47.3	32.8	34.3	34.3
Diabetes Mellitus	21.5	28.6	22.2	22.0	21.9	22.1
Kidney Disease	9.1	Not Reported	8.8	14.9	14.7	14.6
Pneumonia/ Influenza	14.8	13.7	12.1	14.3	14.1	13.8
Intentional Self-harm (Suicide)	20.3	15.6	14.0	13.5	14.0	14.3
Chronic Liver Disease and Cirrhosis	11.6	12.8	10.6	10.6	10.6	11.1

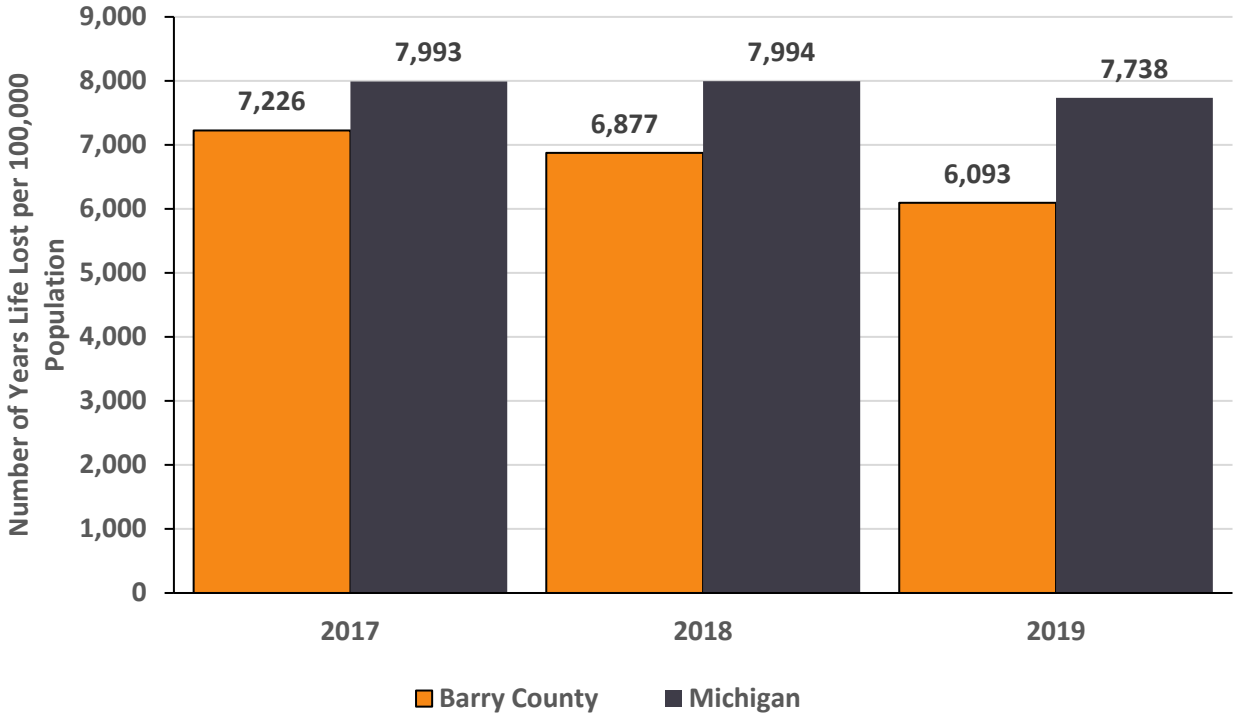
Source: *Community Health Information – Mortality, Michigan Department of Health and Human Services, Division for Vital Records and Health Statistics.*

Premature Death Rate

Years of Potential Life Lost (YPLL) is one way to look at premature death. YPLL uses a life expectancy of 75 years. So, a person who dies at 70 years old has lost five years of potential life. When calculating the years of potential life lost for a community, all of the potential life years lost over a year are combined. That sum is then divided by the total population of that area for that year and then multiplied by 100,000 to construct the rate.[61]

The total number of YPLL was lower in Barry County than in Michigan from 2017 to 2019. Total YPLL steadily declined in Barry County (from 7,226 to 6,093) from 2017 to 2019 and in Michigan (from 7,993 to 7,738) between 2017 and 2019 (Figure 57).[62]

Figure 57: Years of Potential Life Lost per 100,000 Population



Source: Rates of Years of Potential Life Lost below Age 75 by Sex and Race, Barry County – Michigan Department of Health and Human Services, Division for Vital Records and Health Statistics

The average YPLL was lower in Barry County than Michigan across the three, three-year periods. From 2015-2017 to 2017-2019, the YPLL decreased from 6,855.8 to 6,729.8 in Barry County, while it remained relatively steady in Michigan (7,918.6 and 7,907.6).

The causes of death with the highest YPLL were related to malignant neoplasms, accidents, and heart diseases for Barry County and Michigan across the three periods. However, the YPLL from intentional self-harm or suicide was higher on average in Barry County (between 453.1 and 703.4) than in Michigan (between 429.4 and 454.6) across the three periods (Table 13).[62]

Table 13: ***Three-Year Average Rates of Years of Potential Life Lost Below Age 75 by Leading Conditions***

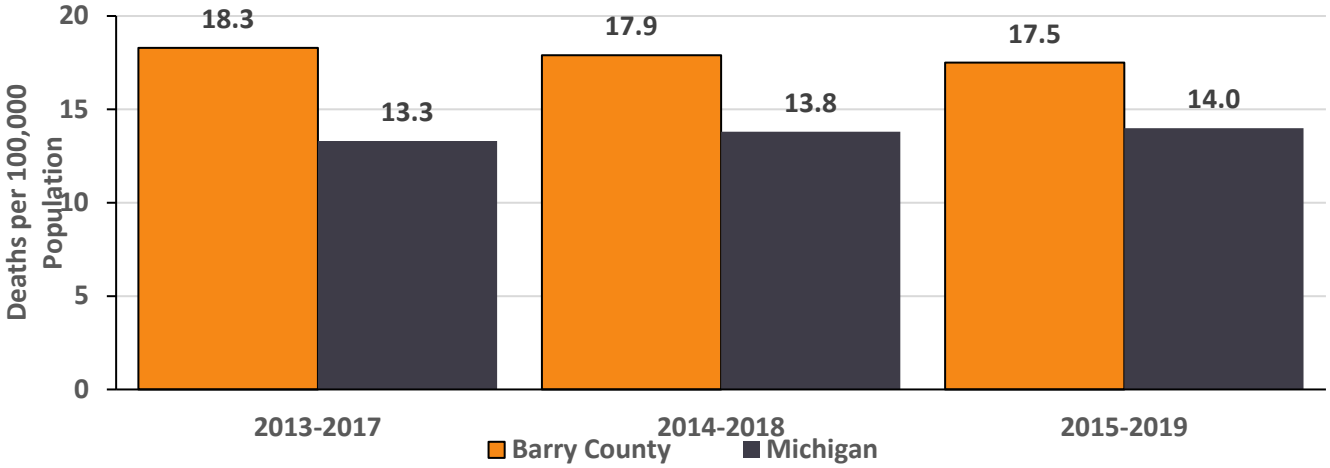
	Barry County			Michigan		
	2015-2017	**2016-2018**	**2017-2019**	**2015-2017**	**2016-2018**	**2017-2019**
All Causes	6,855.8	6,965.5	6,729.8	7,918.6	8,002.0	7,907.6
Malignant Neoplasms	1,733.1	1,733.1	1,588.9	1,601.9	1,579.6	1,549.7
Accidents	850.7	849.9	1,029.2	1,311.6	1,386.4	1,347.7
Diseases of the Heart	1,068.6	1175.2	1,147.5	1312	1,317.7	1,282.7
Intentional Self-Harm (Suicide)	703.4	519.3	453.1	429.4	447.1	454.6
Chronic Lower Respiratory Diseases	314.3	305.7	261.9	251.7	252.5	253.7
Chronic Liver Disease and Cirrhosis	143.7	160.2	135.3	206	204.2	216.1
Diabetes Mellitus	203.5	281.9	200.1	208.7	205.3	213
Cerebrovascular Diseases	156.8	208.9	224.8	180.8	182.5	180.2
Influenza and Pneumonia	71.8	71.2	55.9	93.3	98.9	100.2
Nephritis, Nephrotic Syndrome and Nephrosis	65.9	Not Reported	55.9	84.2	85.2	89
All Other Causes	1,066.8	1,086.7	1,035.1	1,383.4	1,390.0	1,390.2

Source: *Rates of Years of Potential Life Lost below Age 75 by Sex and Race, Barry County – Michigan Department of Health and Human Services, Division for Vital Records and Health Statistics*

Suicide Rate

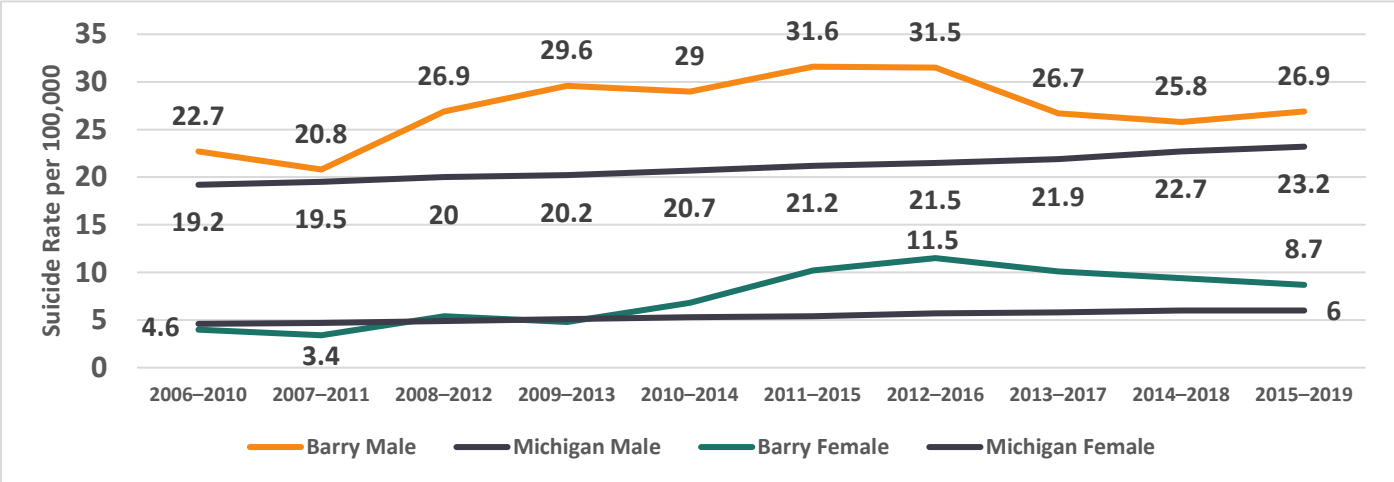
The age-adjusted suicide rate per 100,000 population was higher in Barry County than Michigan across the three, five-year periods. There was a slight decline in the suicide rate in Barry County (from 18.3 to 17.5) and a slight increase in Michigan (from 13.3 to 14.0) between 2013-2017 and 2015-2019 (Figure 58).[63]

Figure 58: Overall Age-Adjusted Suicide Rates per 100,000 Population



Source: Critical Indicators, Barry County – Michigan Department of Health and Human Services, Division for Vital Records and Health Statistics

Figure 59: 5-Year Rolling Suicide Rate by Gender, 2006-2010 to 2015-2019



When comparing suicide rates in Barry County to the state by gender (Figure 59), there is a stark contrast between male and female rates in both comparison to the state, and to the opposite gender. Males in Barry County have a suicide rate over three times higher than Barry County females and over four times higher than the rate for females in Michigan. Females in Barry County also have a slightly higher suicide rate compared to their state counterparts. While the trend in both males and females has declined in Barry County from the 2012-2016 to 2015-2019 timeframe, it is still of concern given the size of difference between comparison groups.

Chronic Disease

Chronic disease is the leading cause of death and disability in the United States. According to the National Center for Chronic Disease Prevention and Health Promotion, chronic diseases are defined as “conditions that last one year or more and require ongoing medical attention or limits activities of daily living or both.” Six in 10 adults in the United States have a chronic disease, and four in 10 adults have two or more chronic diseases.

Indicators

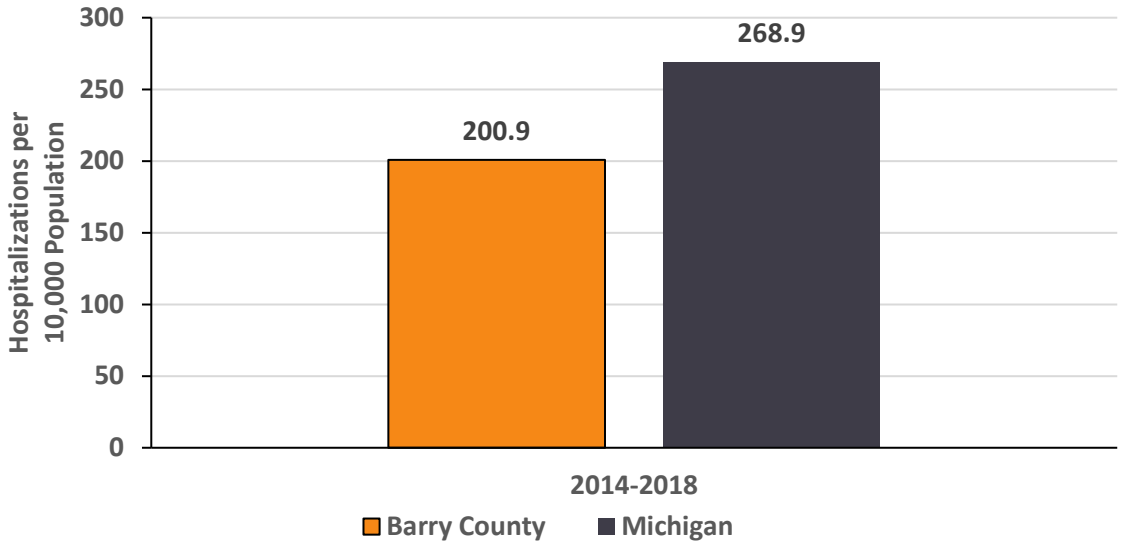
- Preventable Hospitalizations
- Prevalence of Diabetes
- Diabetes Hospitalizations
- Diabetes Management Education
- Congestive Heart Failure Hospitalizations Among Adults 65 Years and Older
- Chronic Obstructive Pulmonary Disease Hospitalizations
- Prevalence of Adult Asthma
- Prevalence of High Cholesterol
- Prevalence of High Blood Pressure
- Disability Rate

Preventable Hospitalizations

Ambulatory Care Sensitive Conditions (ACSCs) are health conditions or diagnoses for which timely and effective ambulatory care can reduce the risks of hospitalizations. ACSCs include, but are not limited to, asthma, diabetes, and dehydration.[64] High rates of hospitalizations due to ACSCs in a community may be an indicator of the lack or failure of prevention efforts; a primary care resource shortage; poor performance of primary health care delivery systems; or other factors that create barriers to obtaining timely and effective care, resulting in poor health outcomes.

In 2014-2018, the number of preventable hospitalizations per 10,000 population was lower in Barry County (200.9) than in Michigan (268.9) (Figure 60).[64]

Figure 60: Preventable Hospitalizations per 10,000 Population



Source: 2003-2019 Michigan Resident Inpatient Files created by the Division for Vital Records and Health Statistics, Michigan Department of Health and Human Services

Prevalence of Diabetes

Diabetes is a chronic disease in which the body's ability to metabolize carbohydrates and sugars is impaired. Complications from diabetes can include stroke, kidney failure, nerve damage, blindness and lower-limb amputations. When accounting for medical costs and loss of productivity, researchers estimated that diabetes cost the United States $327 billion in 2017.[65] As the number of overweight and obese individuals increases, diabetes is also expected to increase.

In Figure 61, fewer adults in Barry County (10.4%) reported being ever told that they have diabetes than in Michigan (12.3%). The percentage of adults in each successive age group reporting ever being told they had diabetes increased (from 2.6% in 25- to 34-year-olds to 20.8% among those 65 years and older). Non-Hispanic White people were almost three times less likely to report ever being told they had diabetes. As income levels increased, the percentage of adults reporting they had diabetes decreased (from 12.1% among those with less than $25,000 income to 3.0% among those with an income of $75,000 or more).[22,23]

Figure 61: Percentage of Adults with Diabetes by Demographic Characteristics

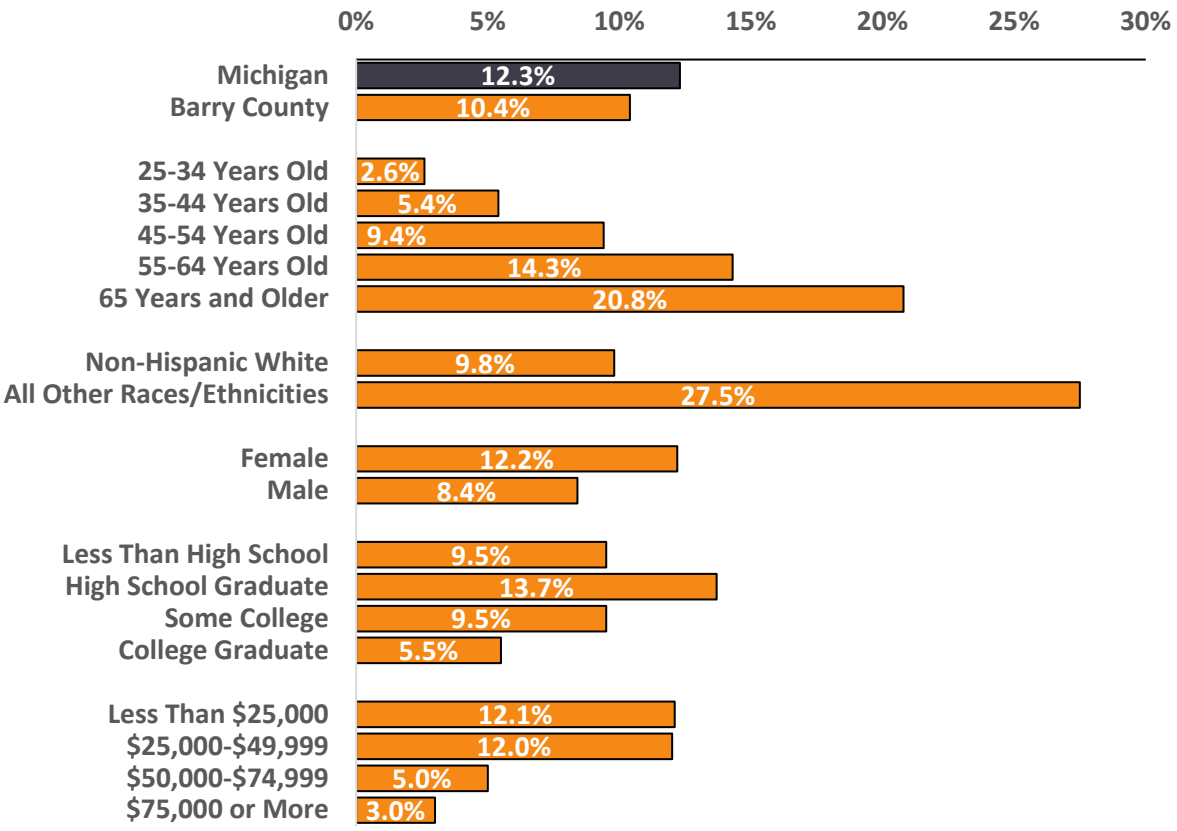
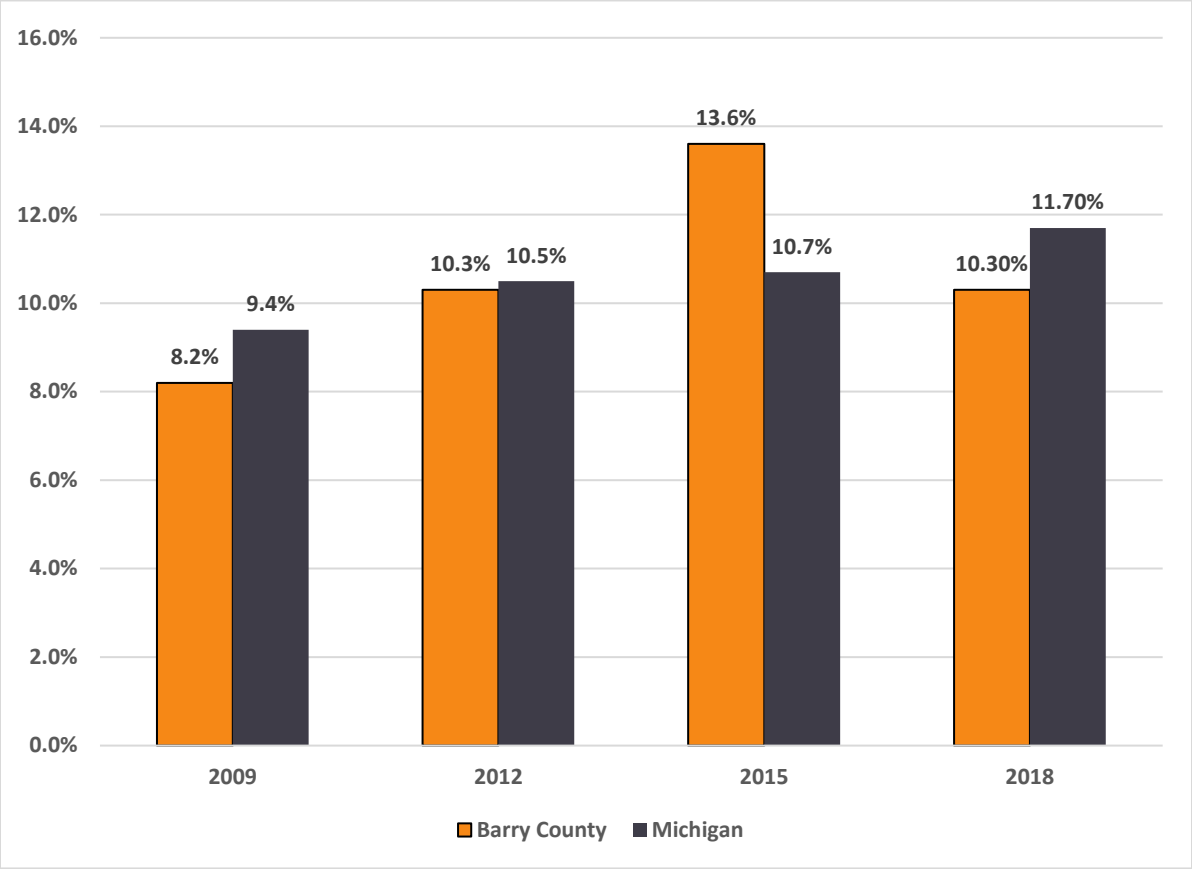


Figure 62: Percent of Barry County Residents Who Have Ever Been Told They Have Diabetes, 2009-2018



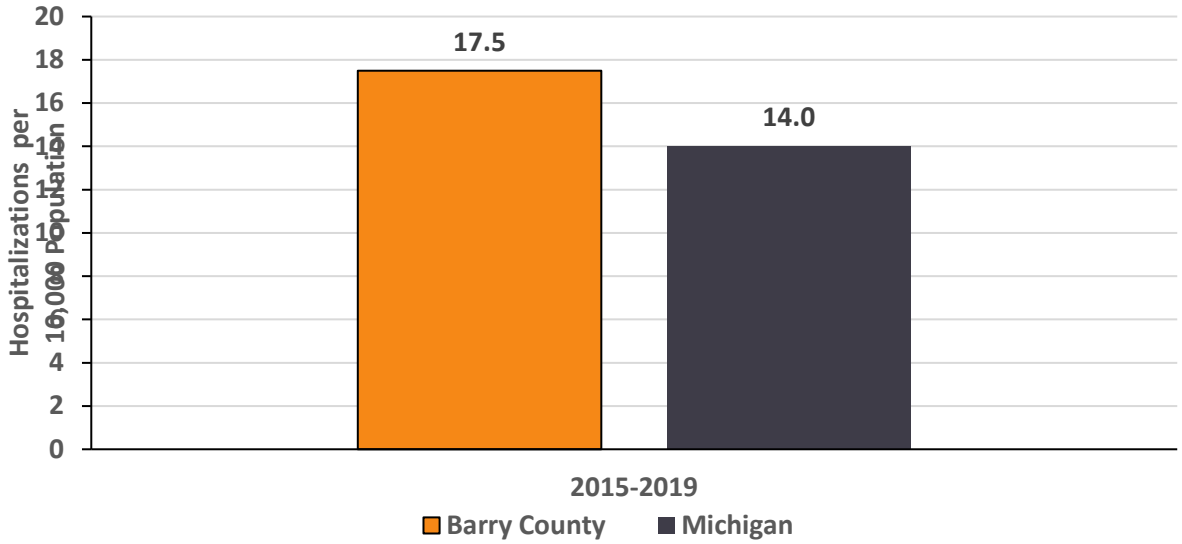
Over the four survey cycles collected, Barry County and Michigan have both seen an increase in prevalence of diabetes from 2009 to 2018. This increase is informed by the higher rates of obesity over the same time period and with the lack of leisure time physical activity.

Sources:
2017-2019 Capital Area Behavioral Risk Factor Survey, Barry County Only
2020 MDHHS Behavioral Risk Factor Survey

Diabetes Hospitalizations

In 2015-2019, the number of hospitalizations related to diabetes per 10,000 population was higher in Barry County (17.5) compared to Michigan (14.0) (Figure 63).[64]

Figure 63: Diabetes Hospitalizations per 10,000 Population



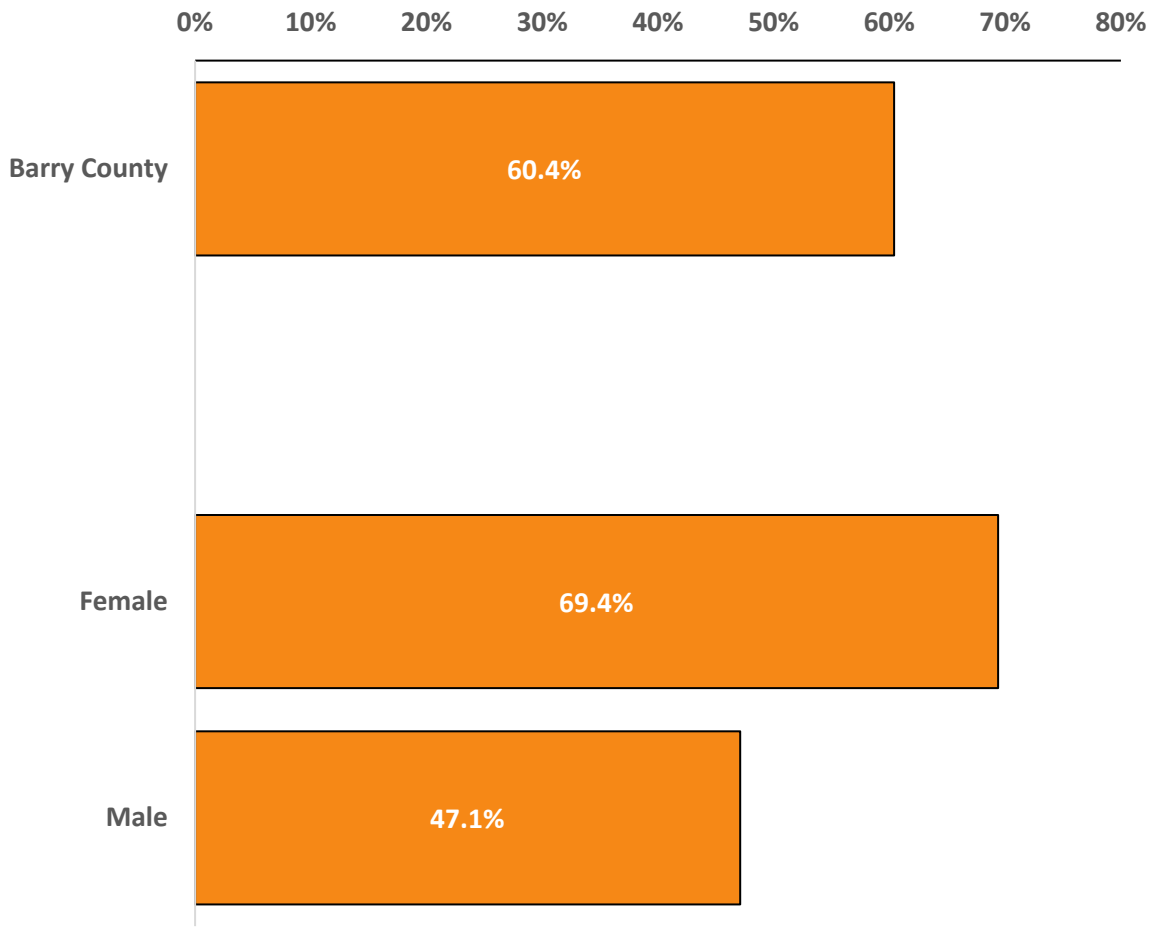
Source: 2003-2019 Michigan Resident Inpatient Files created by the Division for Vital Records and Health Statistics, Michigan Department of Health and Human Services

Diabetes Management Education

Diabetes may not lead to disability, higher medical costs, or early death if managed properly. The purpose of diabetes self-management and education is to help people diagnosed with diabetes learn how to monitor their condition and make lifestyle changes necessary to prevent complications.[66]

Among adults in Barry County with diabetes, 60.4% reported attending a diabetes self-management course from 2017 - 2019. The percentage of people with diabetes who reported taking this class was higher among women (69.4%) than men (47.1%) (Figure 64).[22]

Figure 64: Percentage of Adults with Diabetes Who Attended a Diabetes Self-Management Course

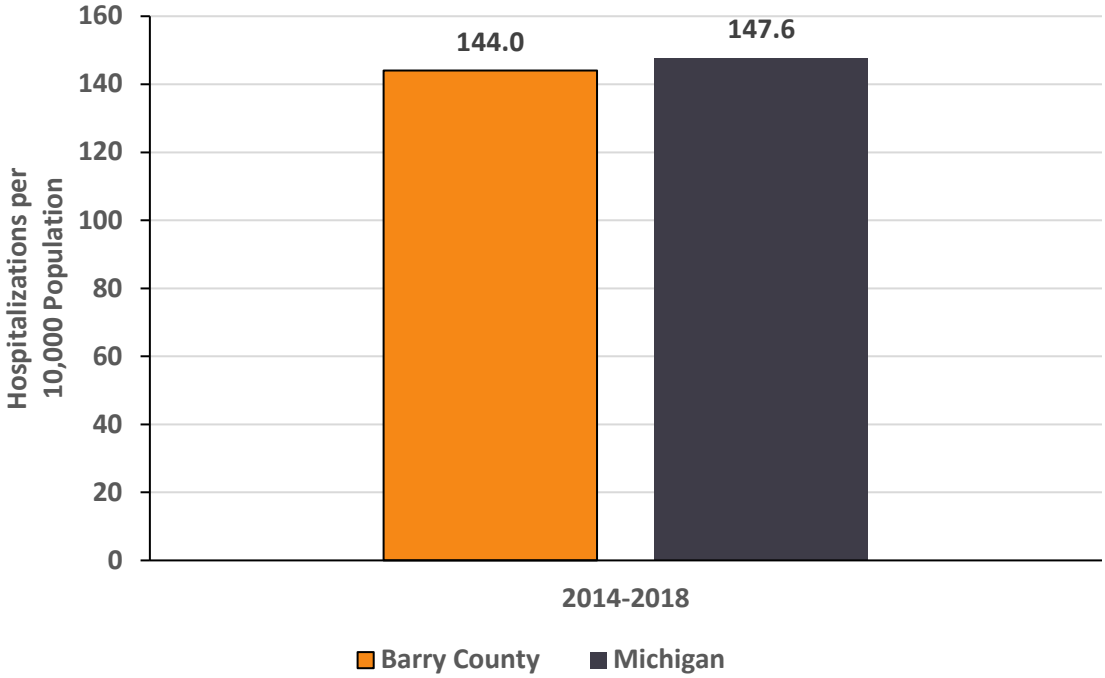


Source: 2017-2019 Capital Area Behavioral Risk Factor Survey, Barry County Only

Congestive Heart Failure Hospitalizations Among Adults 65 Years and Older

In 2014-2018, the number of congestive heart failure hospitalizations per 10,000 population was lower in Barry County (144.0) than in Michigan (147.6) among adults 65 years and older (Figure 65).[64]

Figure 65: Congestive Heart Failure Hospitalizations per 10,000 Population

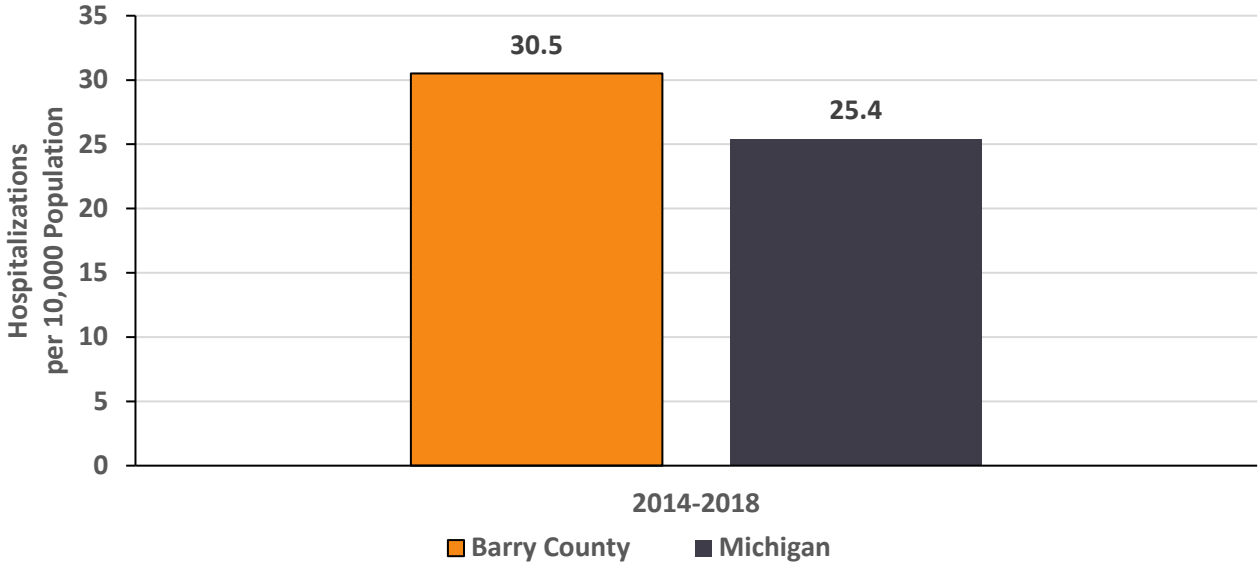


Source: 2003-2019 Michigan Resident Inpatient Files created by the Division for Vital Records and Health Statistics, Michigan Department of Health and Human Services

Preventable Chronic Obstructive Pulmonary Disease Admissions

In 2015-2019, chronic obstructive pulmonary disease hospitalizations per 10,000 population were higher in Barry County (30.5) compared to Michigan (25.4) (Figure 66).[64]

Figure 66: Chronic Obstructive Pulmonary Disease Hospitalizations per 10,000 Population



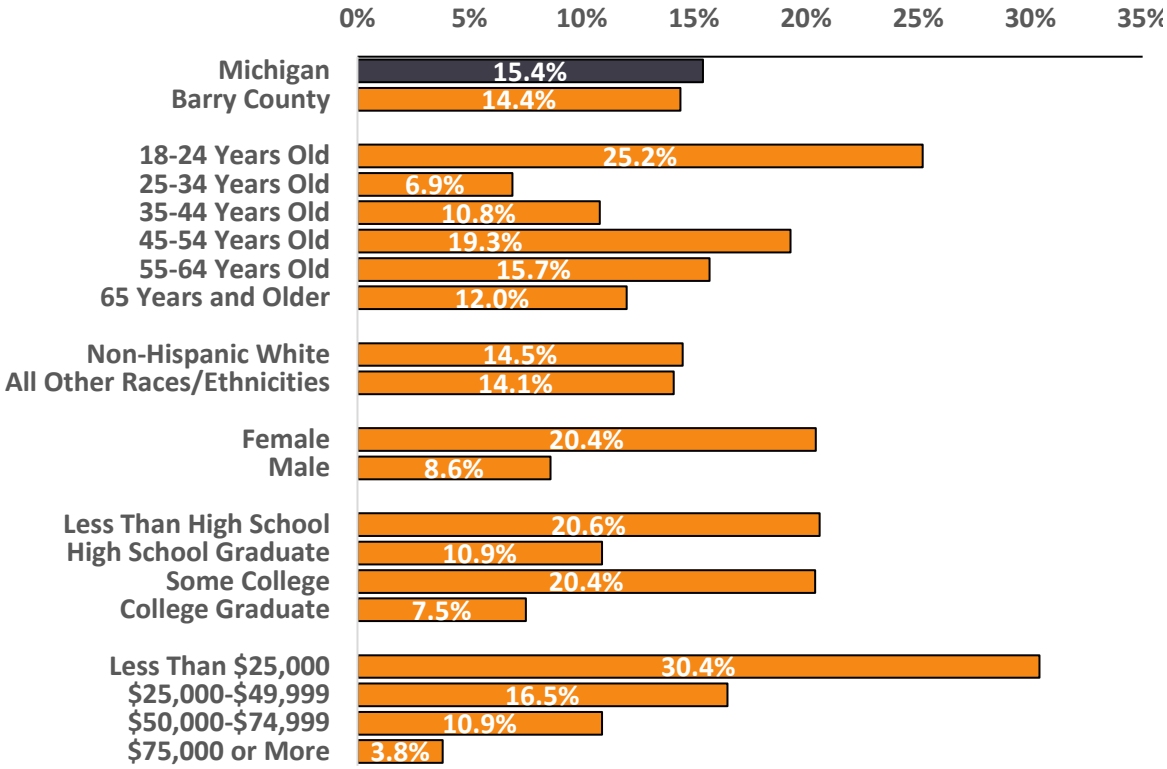
Source: 2003-2019 Michigan Resident Inpatient Files created by the Division for Vital Records and Health Statistics, Michigan Department of Health and Human Services

Prevalence of Asthma in Adults

Asthma is a chronic disease of the airways characterized by periods of reversible airflow obstruction resulting in coughing, wheezing, chest tightness and breathing difficulties.[67] It is estimated that between 2008 and 2013 medical costs related to asthma were $3,266 and prescription costs were $18,000 per person, per year in the United States. Collectively, children with asthma miss approximately two days of school per year, and adults with asthma miss two days of work per year.[68]

As shown in Figure 67, fewer adults in Barry County (14.4%) reported ever having asthma than in Michigan (15.4%) between 2017 and 2019. In Barry County, a higher percentage of adults 18 to 24 years old were more likely to have been told that they have asthma compared to the other age groups. Females were two to three times more likely to report having asthma than males. Those with a household income less than $25,000 were more likely to have ever been told that they have asthma and were more likely to currently have asthma than the other income levels.[22,23]

Figure 67: Percentage of Adults with Asthma by Demographic Characteristics



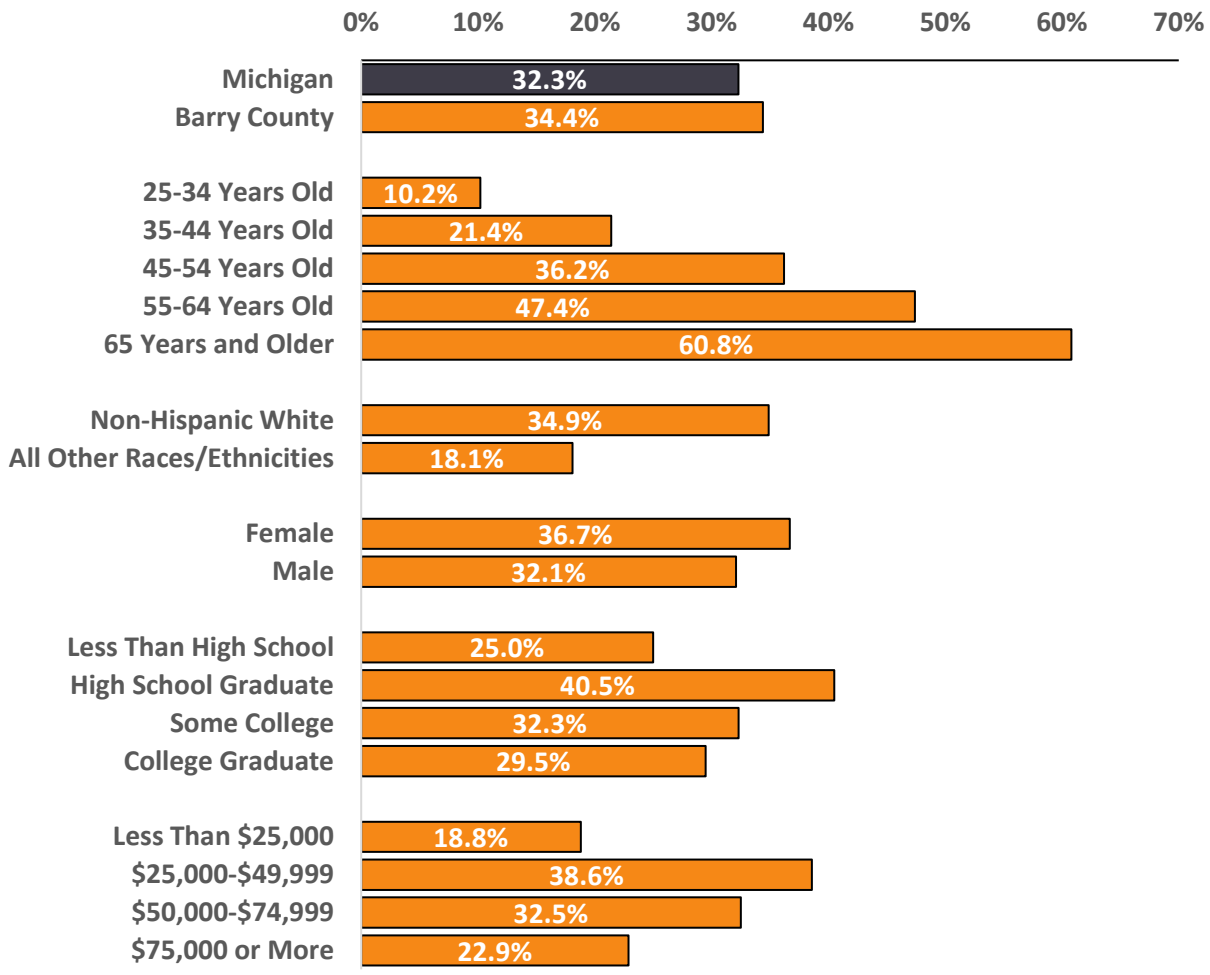
Sources:
2017-2019 Capital Area Behavioral Risk Factor Survey, Barry County Only
2020 MDHHS Behavioral Risk Factor Survey

Prevalence of High Cholesterol

An elevated level of blood cholesterol (total cholesterol >200 mg/dL) is one of the significant risk factors for heart disease, a leading cause of death in Michigan and nationally. In the United States, nearly one-third of adults have high cholesterol.[69]

The percentage of adults in Barry County (34.4%) reporting they were ever being told they have high cholesterol was about the same as in Michigan (32.3%) between 2017 and 2019. The percentage of adults 65 years old or older (60.8%) reporting being told they had high cholesterol was nearly six times higher than the percentage in the 25 to 34-year-old age group (10.2%). Adults with incomes less than $25,000 were almost half as likely to report having been told they had high cholesterol compared to those in the $25,000 to $49,999 and $50,000 to $74,999 income groups. (Figure 68).[22,25]

Figure 68: Percentage of Adults with High Cholesterol by Demographic Characteristics



Sources:
2017-2019 Capital Area Behavioral Risk Factor Survey, Barry County Only
2019 MDHHS Behavioral Risk Factor Survey

Prevalence of High Blood Pressure

Approximately 116 million adults in the United States have high blood pressure, otherwise known as hypertension. Hypertension is defined as having a systolic blood pressure at or above 130 mmHg or diastolic blood pressure at or above 80 mmHg. Hypertension increases the risk for heart disease and stroke, which are leading causes of death in the United States.[70]

Between 2017 and 2019, Barry County adults (28.9%) were less likely to report having ever been told they had high blood pressure than in Michigan (35.1%). The percentage of adults in each age successive group reporting ever being told they have high blood pressure increased from 4.2% among 18- to 24-year-olds to 46.3% among those between 55 and 64 years of age. The 65 years of age and older group was roughly equal to the 55-64 years of age group (45.7%). As education attainment levels and income levels increased, the percentage of adults in those respective groups reporting high blood pressure decreased (Figure 69).[22,25]

Figure 69: Percentage of Adults with High Blood Pressure by Demographic Characteristics

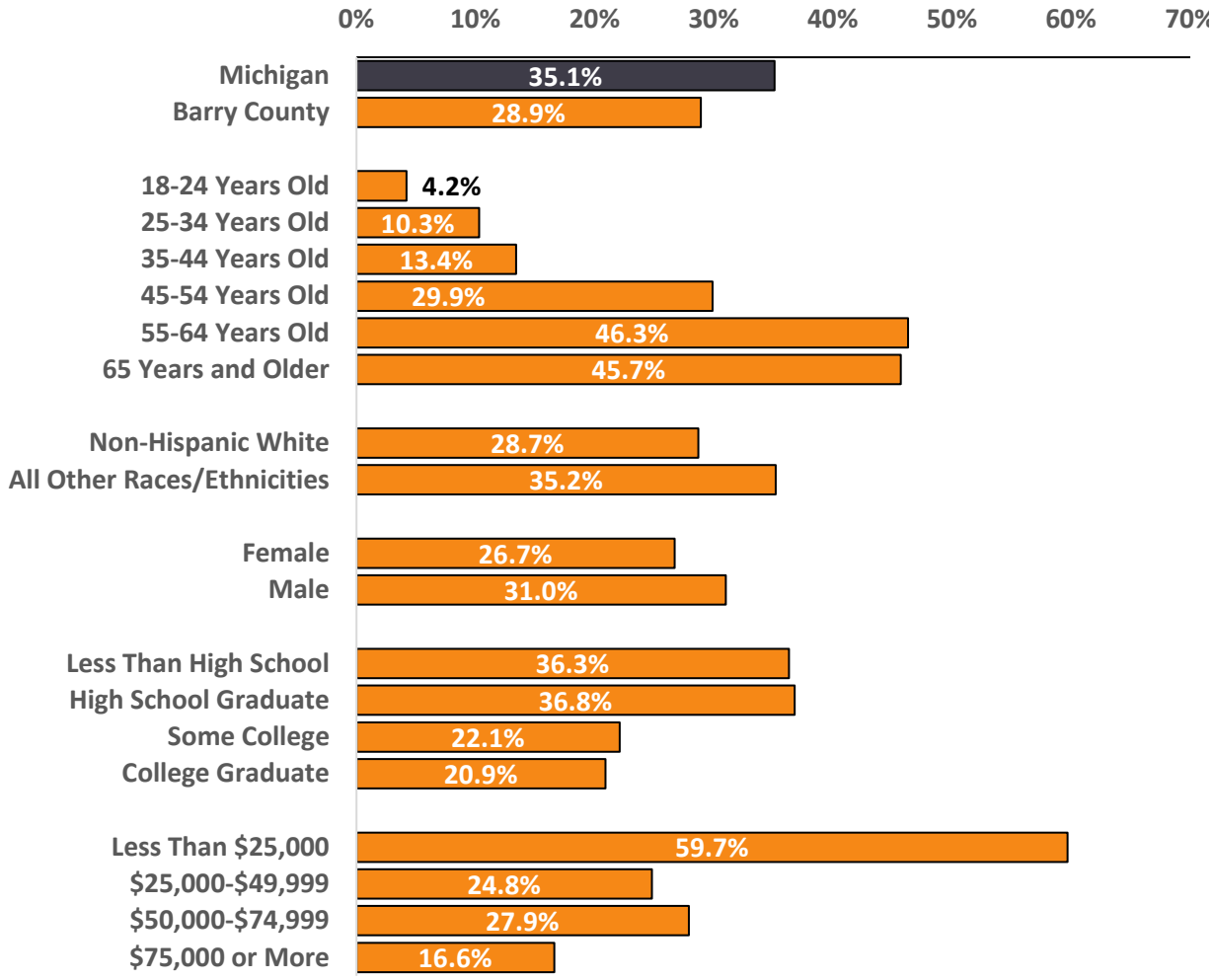
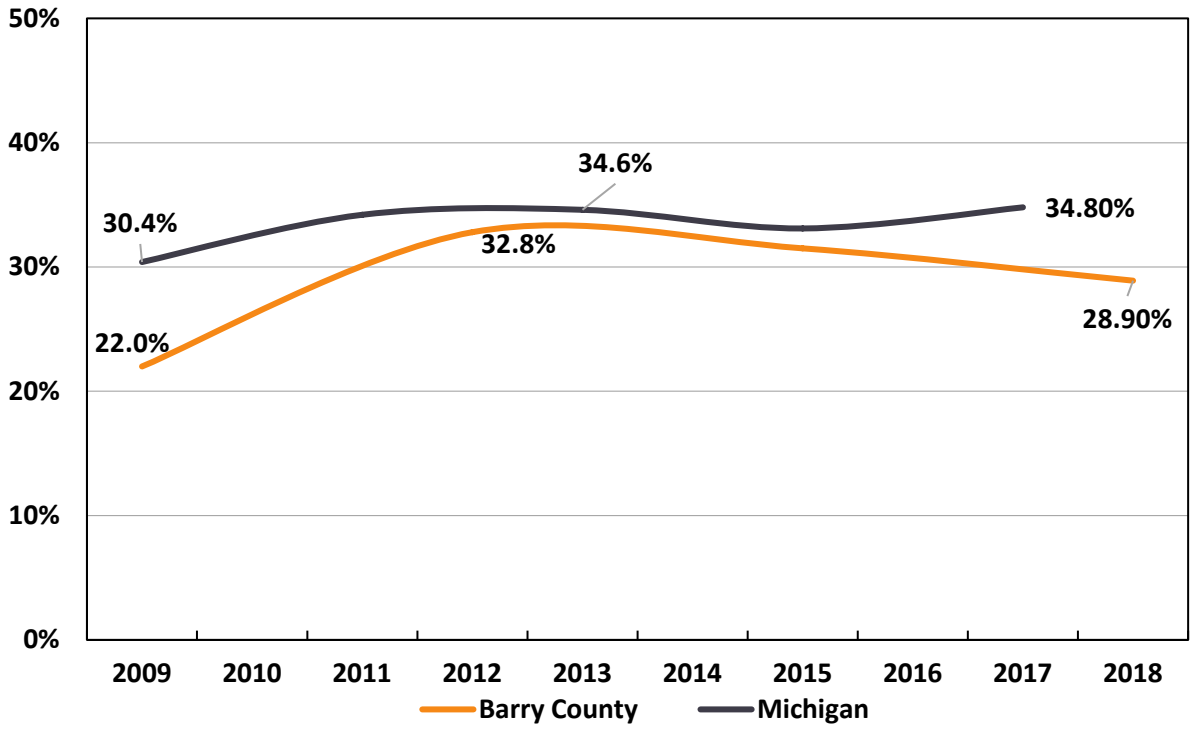


Figure 70: Percentage of Adults with High Blood Pressure, 2009 - 2018



Since the first Barry BRFS survey in 2009, the percentage of adult residents who responded that they had been told they had high blood pressure has increased from 22.0% in 2009, to a high of 32.8% in 2012 before slightly declining to 28.9% in 2018 (Figure 70). This still accounts for nearly three in ten Barry County residents surveyed.

Sources:
2009-2019 Capital Area Behavioral Risk Factor Survey, Barry County Only
2019 MDHHS Behavioral Risk Factor Survey

Disability Rate

A disability is an impairment, activity limitation, or participation restriction people may experience in their daily life. In the United States, approximately 64 million people live with a disability.[71,72] People with a disability are less likely to be employed, and this can affect income received. Households in the U.S. with people who have a disability had a median annual household income of about 60% of families who did not have a person with a disability.[72] In Figure 59 disability is defined as any activity limitations because of a physical, mental, or emotional condition.

As shown in Figure 71, the percentage of adults with a disability in Barry County (26.0%) was slightly lower than in Michigan (27.5%). The percentage of adults who reported an activity limitation due to physical, mental, or emotional problems was almost two to three times higher among individuals reporting to be 45-54 years old (34.8%), 55-64 years old (35.0%), and 65 years and older (31.1%) in comparison to those reporting to be 18-24 years old (12.0%), 25-34 years old (11.6%), and 35-44 years old (17.7%). Those with income levels less than $25,000 were much more as likely to report being told they have a disability compared to the other income groups.[22,23]

Figure 71: Percentage of Adults Who Experience Activity Limitations Because of Physical, Mental or Emotional Problems by Demographic Characteristics

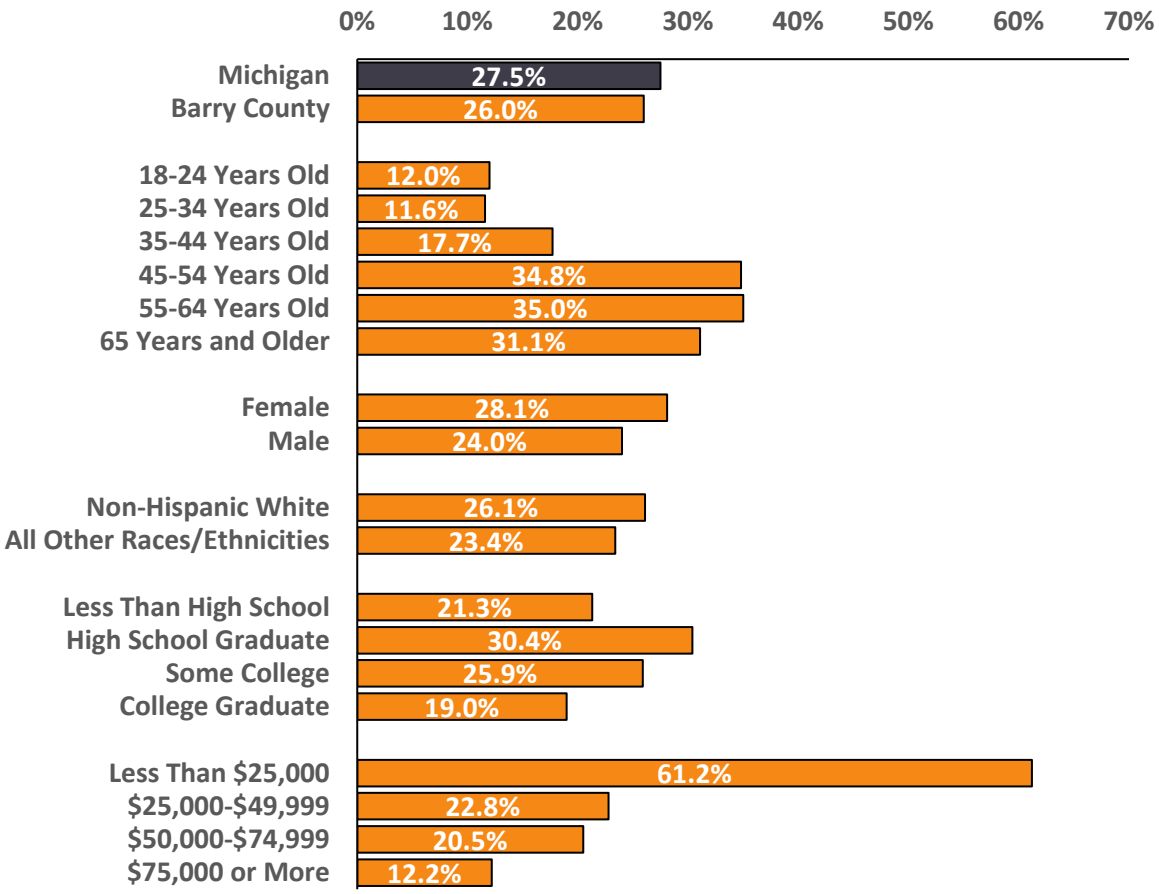
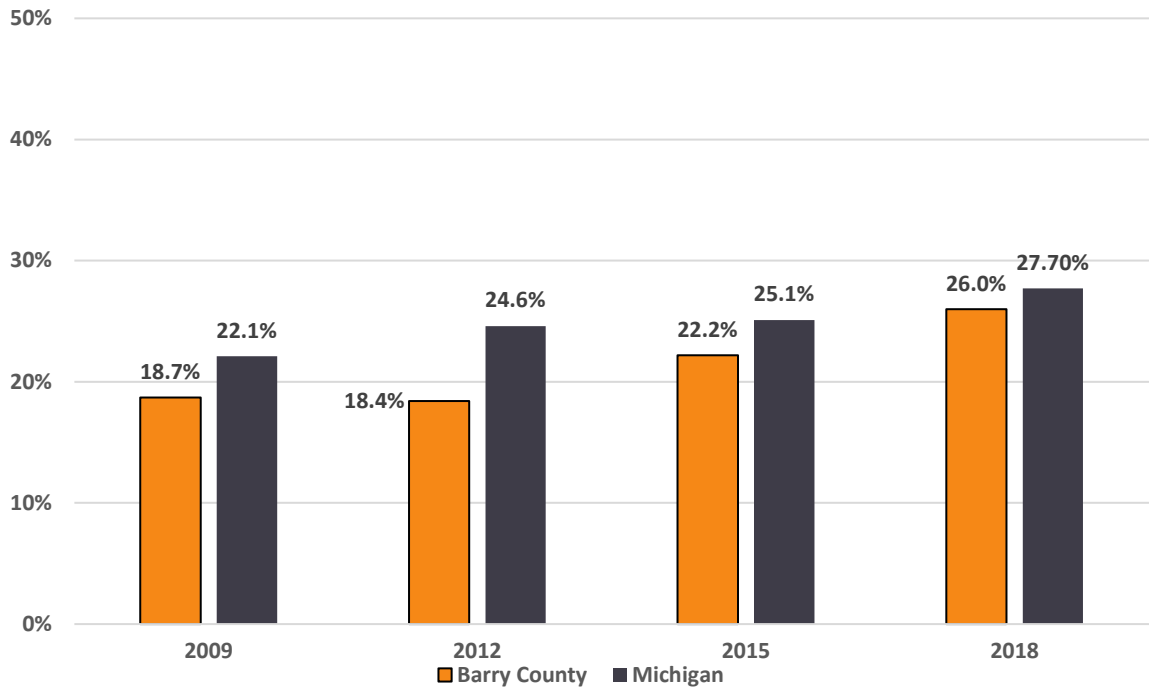


Figure 72: Disability Rate, Barry County, 2009-2019

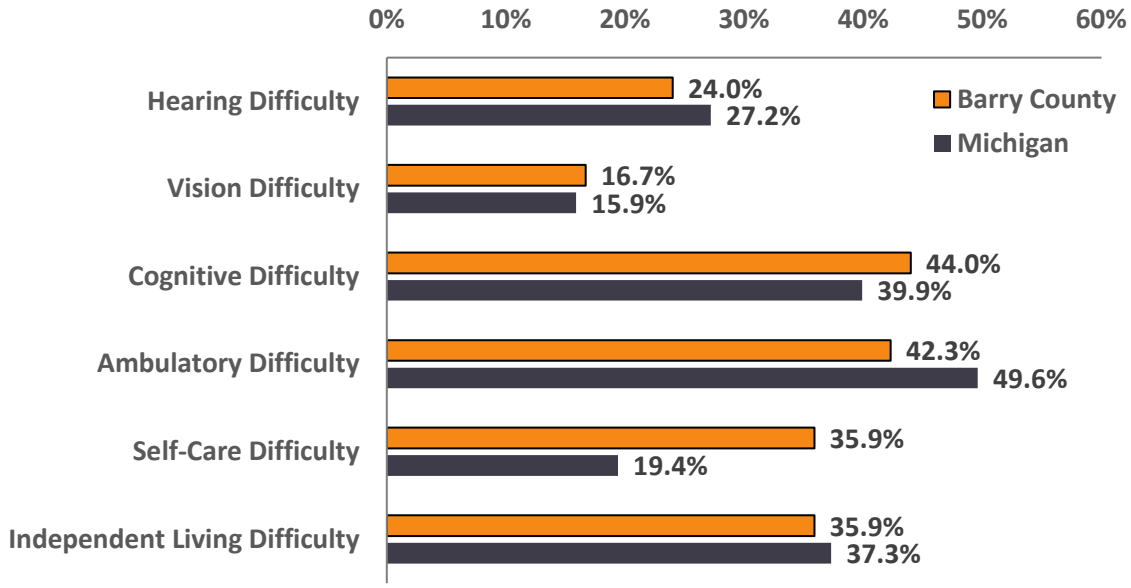


Sources:
2009-2019 Capital Area Behavioral Risk Factor Survey, Barry County Only
2019 MDHHS Behavioral Risk Factor Survey

Since 2009, the disability rate in both Barry County and Michigan has increased, with the rate in Barry County rising more quickly from 2012 to 2018 compared to the state (Figure 72).

The most common difficulties reported by disabled residents in Barry County and Michigan were ambulatory (42.3% vs. 49.6%) and cognitive (44.0% vs. 39.9%) difficulties. Slightly fewer Barry County residents reported experiencing hearing difficulties (24.0% vs. 27.2%) compared to Michigan residents (Figure 73).[73]

Figure 73: Types of Disabilities Among Disabled Adults in Barry County and Michigan



Sources:
2017-2019 Capital Area Behavioral Risk Factor Survey, Barry County Only
2020 MDHHS Behavioral Risk Factor Survey
U.S. Census Bureau: 2019 American Community Survey 1-Year Estimates, Table K201803

Obesity

According to the World Health Organization, obesity is defined as “abnormal or excessive fat accumulation that presents a risk to health.” A person with a body mass index (kg/m^2) over 30 is considered obese.[74] From 1999-2000 through 2017-2018, the prevalence of obesity in the United States increased from 30.5% to 42.4%.[75] Obesity is associated with coronary heart disease, high blood pressure, high cholesterol, stroke, low quality of life, and mental illness.[76]

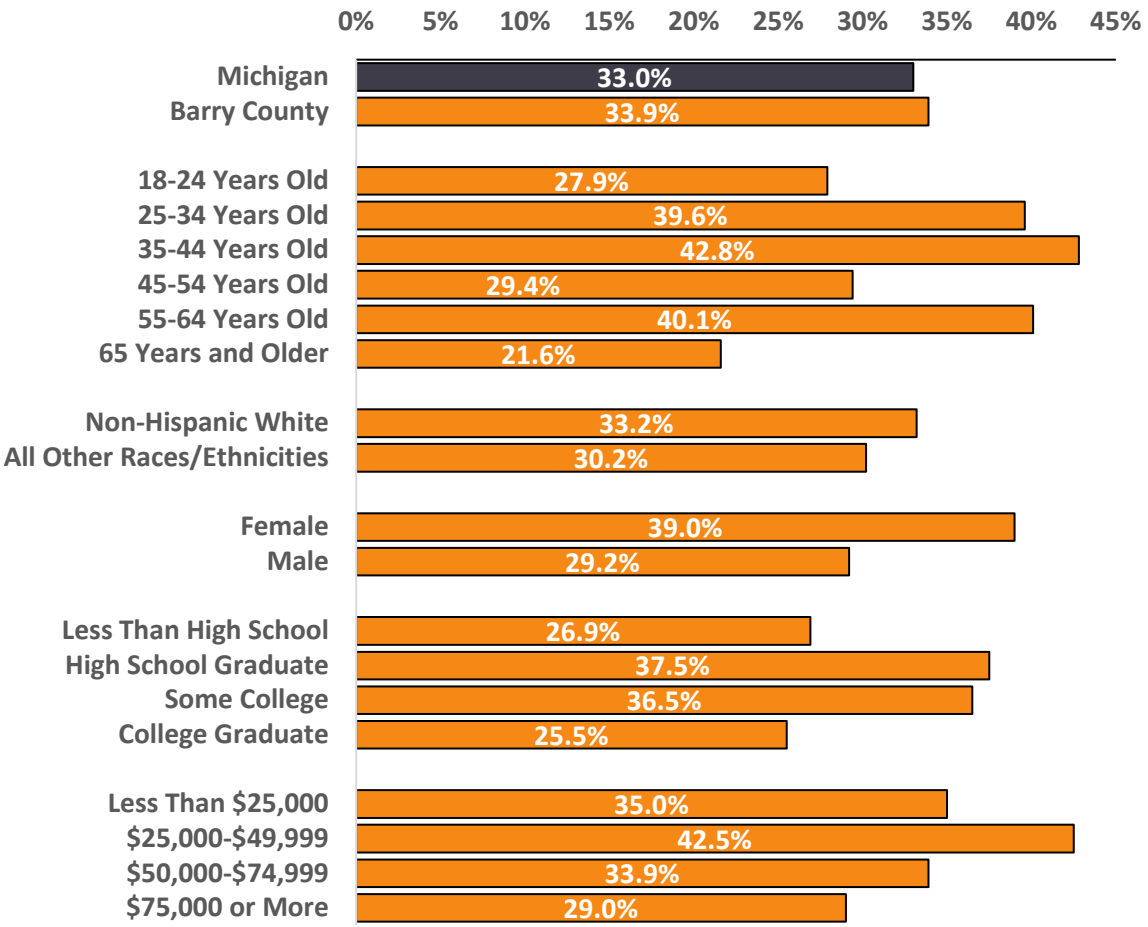
Indicators

- Obese Adults
- Obese Adolescents

Adults Who Are Obese

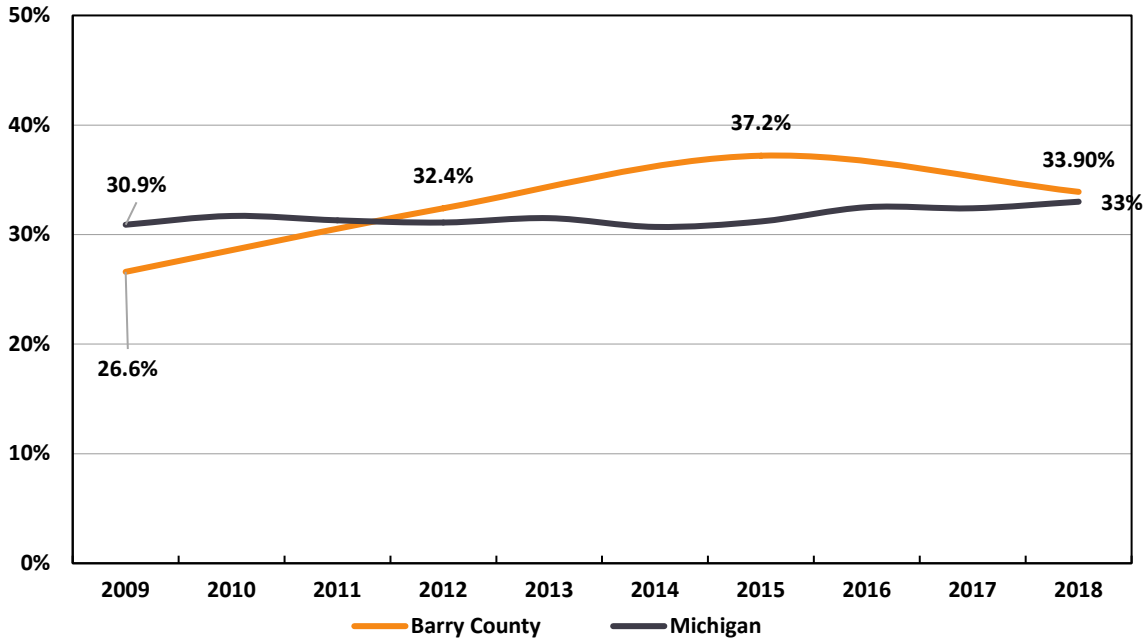
Between 2017 and 2019, adults Barry County (33.9%) and Michigan (33.0%) had a similar percentage of the population reporting that they were obese. More females (38.0%) reported being obese than males (28.4%). High school graduates (37.0%) and those who attended some college (35.0%) were more likely to be obese than those with only a high school education (26.1%) and college graduates (24.5%). Those with income levels under $50,000 generally self-reported higher rates of obesity than those with an income level over $50,000. (Figure 74).[22,23]

Figure 74: Percentage of Adults Who Are Obese by Demographic Characteristics



Sources:
2017-2019 Capital Area Behavioral Risk Factor Survey, Barry County Only
2020 MDHHS Behavioral Risk Factor Survey

Figure 75: Obesity Rate, 2009 – 2018, Barry Count and Michigan



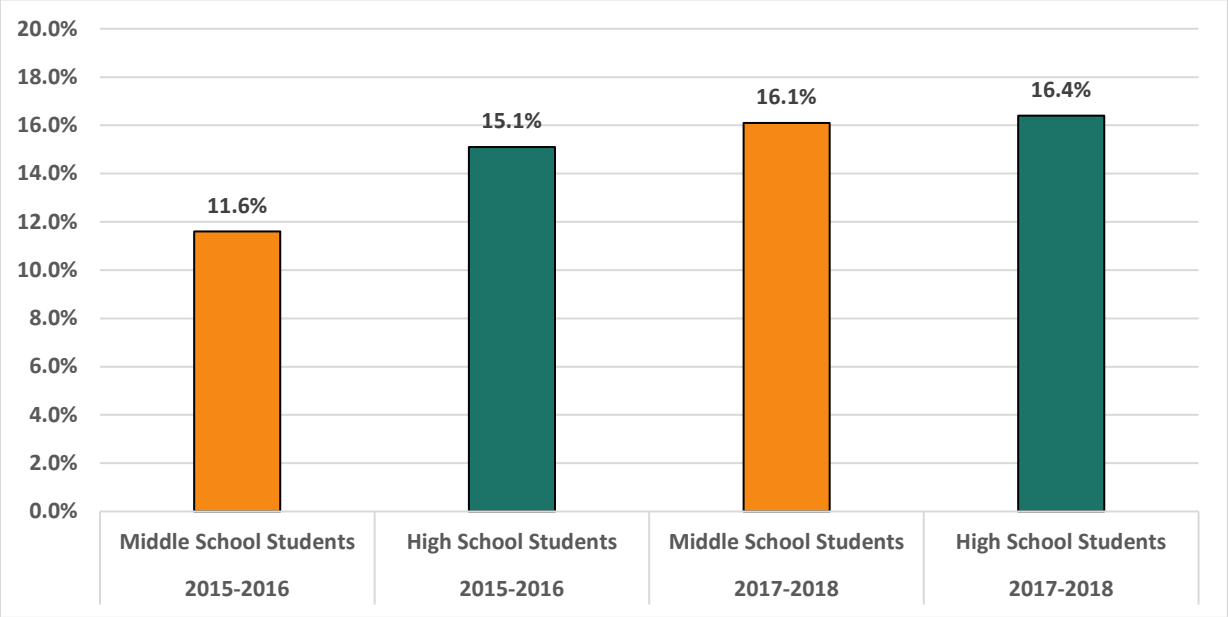
Both Michigan and Barry County have seen increasing rates of obesity over several cycles of the BRFS. State rates have risen from 30.9% in 2009 to 33.9% in 2018. In Barry County, rates have increased from 26.6% to 33.9%, after reaching a peak of 37.2% in the 2015 survey. Not only are the rates of obesity increasing, but so too are the rates of those considered overweight by BMI, rising from 43.9% in 2009 to 38.5% in 2018 (Figure 75). All in all, as the years progress, fewer residents in Barry County are in what is considered a healthy BMI range.

Sources:
2017-2019 Capital Area Behavioral Risk Factor Survey, Barry County Only
2020 MDHHS Behavioral Risk Factor Survey

Adolescents Who Are Obese

The percentage of obese middle and high school students in Barry County increased from 2015-2016 to 2017-2018. The most significant increase in the percentage of obese students was among middle school students (from 11.6% to 16.1%). There was a 1.3 percentage point increase in obesity among high school students (Figure 76).[57,77] As seen in the adult population, the rate of obesity is increasing over time in most age groups, including middle- and high-school students. Unfortunately, between the COVID-19 pandemic and a lack of student responses, the two most recent survey cycles for the Michigan Profile in Healthy Youth have not had enough data to have newer data. The next possible data update for this survey will be 2024 if there are enough responses.

Figure 76: Percentage of Adolescents Who Are Obese, Barry County



Sources:
2017-2018 Michigan Profile for Healthy Youth – Weight and Nutrition Summary Table
2015-2016 Michigan Profile for Healthy Youth – Weight and Nutrition Summary Table

Mental Health Needs and Access

According to the World Health Organization, mental health is a "state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her community."[78] Depression, anxiety, bipolar disorder and anger are some conditions affecting moods and behavior. Access to mental health providers allows people to seek treatment for mental health conditions that are severe enough to be detrimental to one's health and to improve their mental health with the aid of mental health providers.

Indicators

- Adults Not Having Good Mental Health
- Mental Health Provider Ratio

Adults Not Having Good Mental Health

Experiencing poor mental health can have any number of causes or triggers. These include the experience of trauma or violence, bullying, and having a chronic disease or disability.[79] The effect of frequent mental distress can negatively impact activities of daily life and, in the case of those with a disability or chronic condition, ongoing management of their condition(s).[80] We define frequent mental distress or not having good mental health is the percentage of adults who reported their mental health as not good for 14 or more days in the previous month.

In Barry County (14.4%) and Michigan (15.8%) in 2017-2019, the percentage of adults reporting not having good mental health was about the same. When looking at the different age groups, 18 to 24-year-olds (25.5%) and 45 to 54-year-olds (22.1%) were each almost twice as likely to report not having good mental health compared to the other age groups. Females in Barry County were twice as likely to report not having good mental health in comparison to males from 2017-2019. Those with less than $25,000 income were over four times more likely to report not having good mental health compared to those with a household income of $50,000 to $74,999 and $75,000 or more (Figure 77).[22,23]

Figure 77: Percentage of Adults Not Having Good Mental Health in the Past Month by Demographic Characteristics

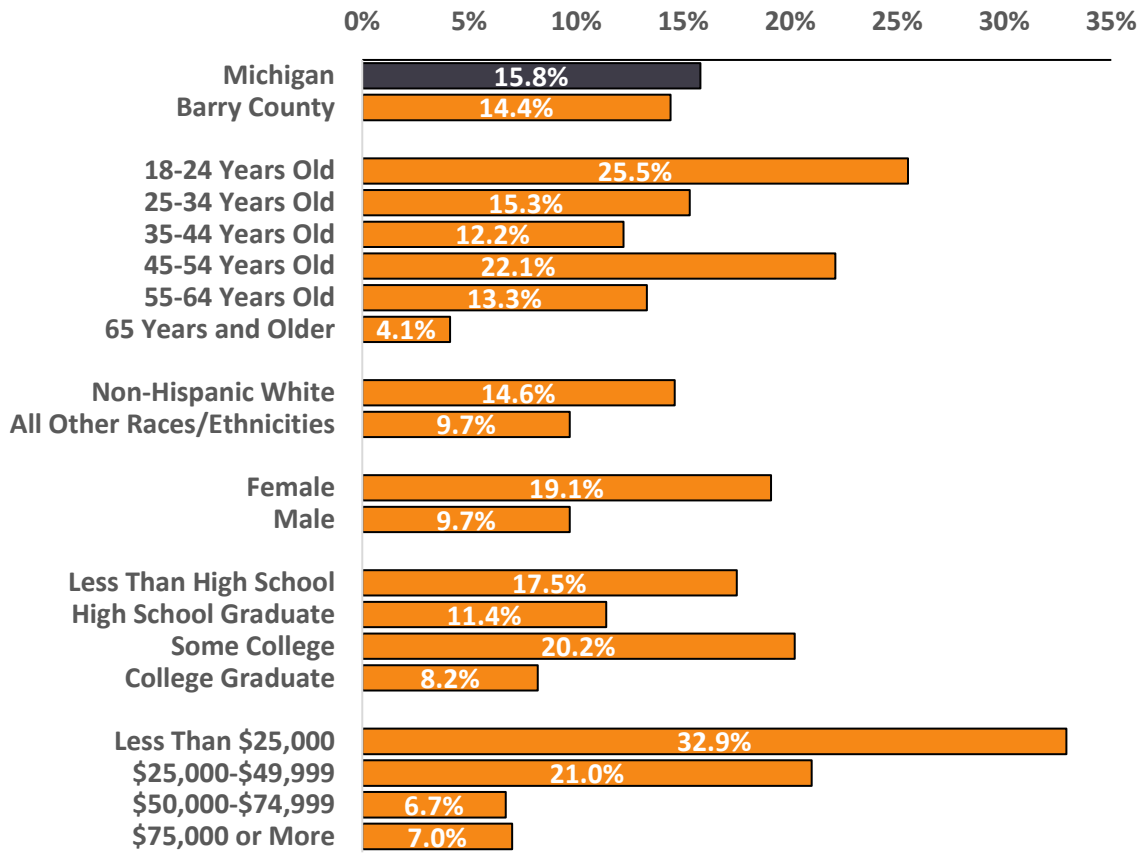
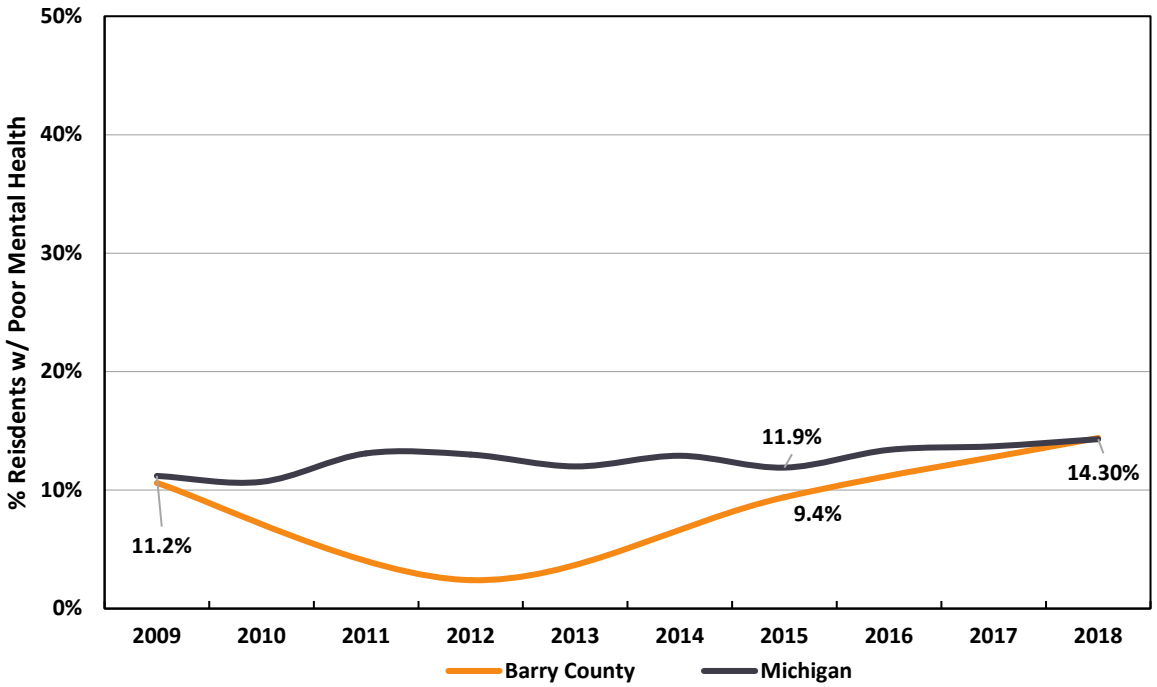


Figure 78: Percentage of Residents with Poor Mental Health, 2009-2018



Except for the 2012 cycle, where there was a change in the wording of this question, Barry County has remained within 2 percentage points of Michigan in terms of poor mental health days in adults. In 2015 there was a slight gap with Barry County being slightly under Michigan, but as of 2018 they are nearly identical (Figure 78).

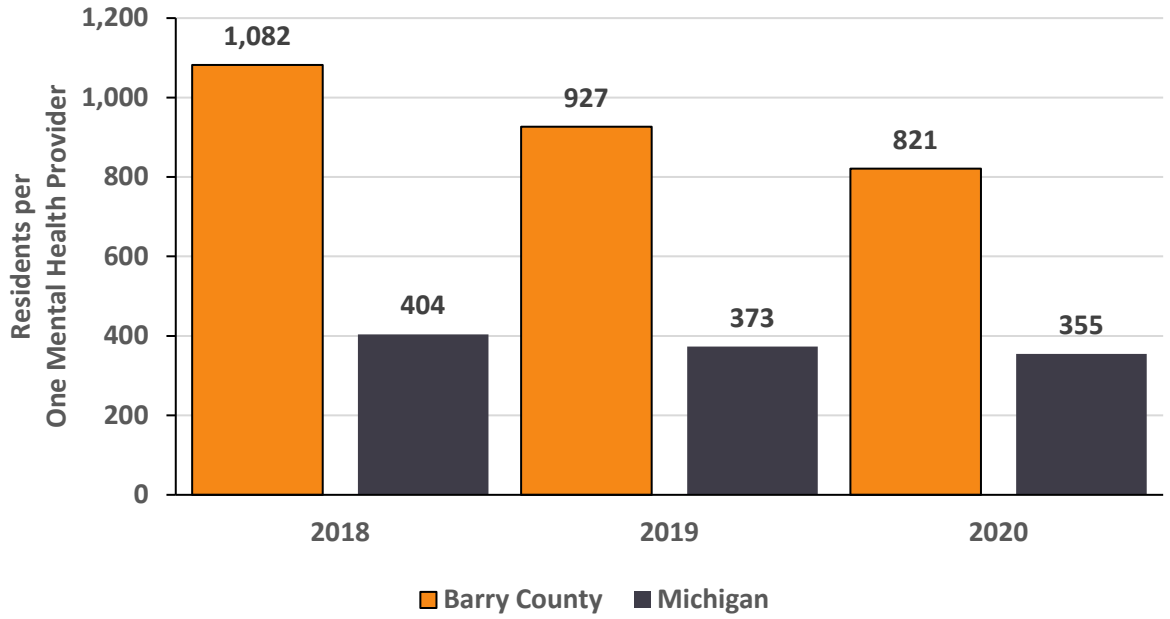
Sources:
2017-2019 Capital Area Behavioral Risk Factor Survey, Barry County Only
2020 MDHHS Behavioral Risk Factor Survey

Mental Health Provider Ratio

In addition to barriers arising from limitations in mental health coverage and the location of services, there are barriers to the services they can provide.[81] Because medication can be a valuable tool in some mental and behavioral health therapies, there is a need for mental and behavioral health providers who can prescribe medication. Additionally, in 2021, nearly one in five counties in the United States had fewer non-prescribing mental and behavioral health providers than needed in the community.[82]

From 2018 to 2020, the population of one mental health provider to resident ratio was much higher in Barry County compared to Michigan. However, since 2018, the population to one mental health provider ratio has seen strong improvement in Barry County (from 1,082 in 2018 to 821 in 2020) and a steadier improvement in Michigan at large (from 404 in 2018 to 355 in 2020) (Figure 79).[83] Compared to the top 10% of counties in the U.S. (250 in 2020), there is still significant room for improvement in Barry County and for the State of Michigan.

Figure 79: Ratio of Population to Mental Health Providers in Barry County and Michigan



Source: Area Health Resources Files Data Downloads | 2020-2021 County Level Data, United States Health Resources & Services Administration, Bureau of Health Workforce

Substance Misuse

The American Public Health Association defines substance misuse as the "use of illegal drugs and the inappropriate use of legal substances, such as alcohol and tobacco."[84] Substance abuse is strongly associated with poor health outcomes and premature death. Another consequence of substance misuse is an increased incidence of violent crimes and a lack of safety in a community, which affects the health of others who may not use or misuse substances.

Indicators

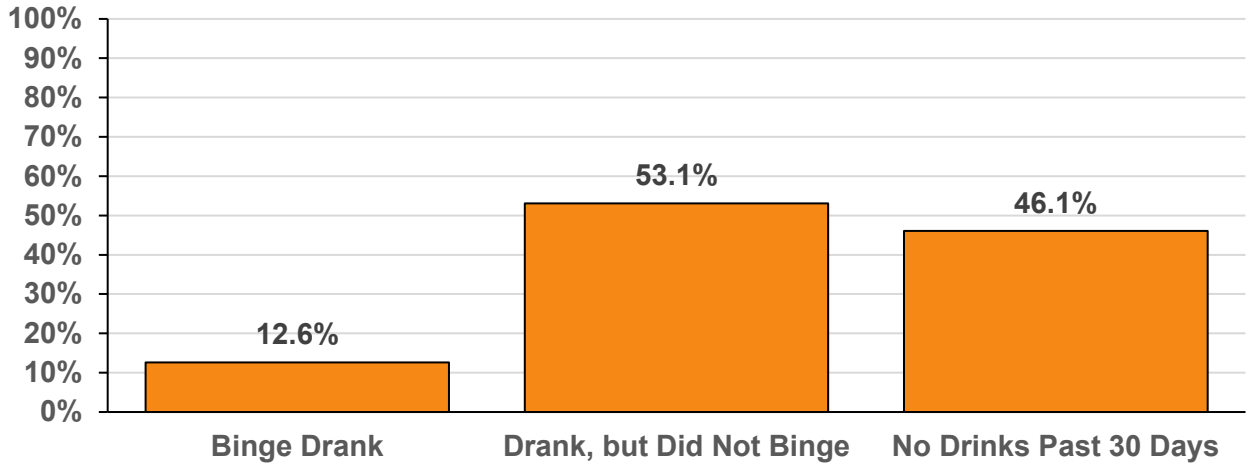
- Adults Who Binge Drank During the Past 30 Days
- Adults Who Drank Heavily During the Past 30 Days
- Adults Who Drank Excessively During the Past 30 Days
- Adolescents Who Binge Drank During the Past 30 Days
- Marijuana Use in Adults During the Past 30 Days
- Adolescents Who Have Used Marijuana During the Past 30 Days
- Adolescents Who Have Used Marijuana Prior to Age 13

Adults Who Binge Drank During the Past 30 Days

For women, binge drinking is defined as consuming more than four alcoholic beverages on a single occasion; for men, it is defined as more than five alcoholic beverages on a single occasion. [85] Consuming a large quantity of alcohol in a short time can result in alcohol poisoning, which can be fatal for a typical person.

In the prior 30 days, 12.6% of adults reported having engaged in binge drinking when surveyed, while 53.1% drank but did not binge and 46.1% did not have any drinks at all during the 2017-2019 survey period. (Figure 80).[22]

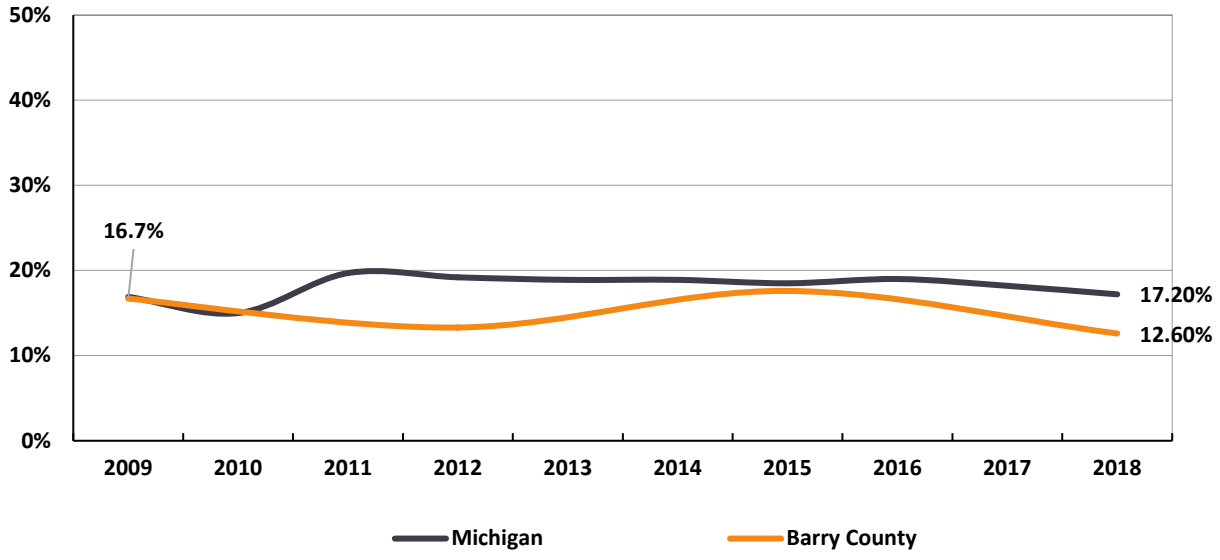
Figure 80: Demographic Characteristics of Binge Drinking Among Adults in Barry County



Source: 2017-2019 Capital Area Behavioral Risk Factor Surveillance System, Barry County Only

In the Figure 81, we see that Barry County has had equal or lower rates of binge drinking than Michigan from 2009 to 2018. Over that time, rates have varied slightly while the overall rate in the state has remained essentially the same until 2018 where it was slightly lower than previous years.

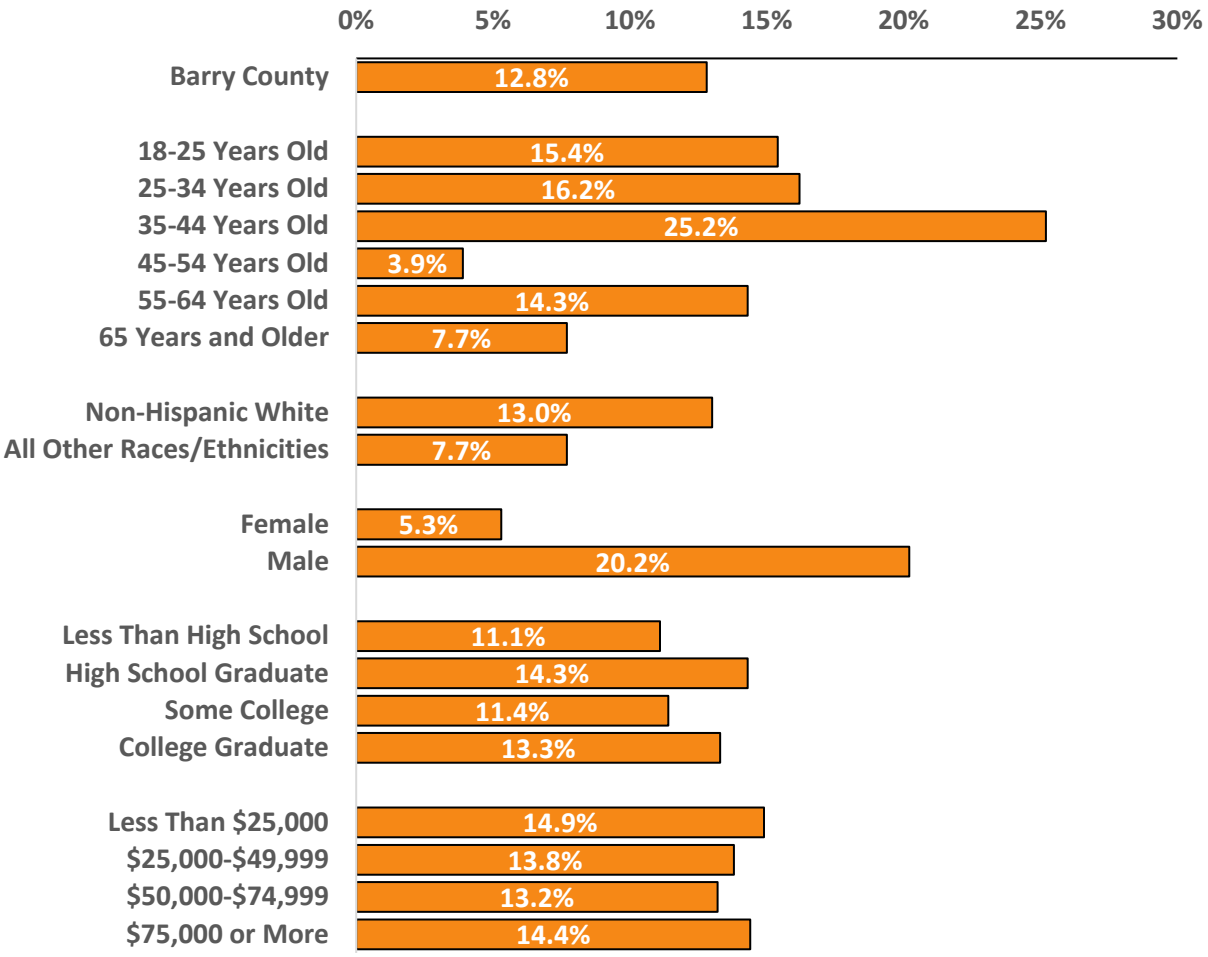
Figure 81: Percentage of Adults Who Binge Drank in the Past Month by Year



One out of four adults between the ages of 25 and 34 reported engaging in binge drinking within the past 30 days. Non-Hispanic White people were twice as likely as all other races and ethnicities, and males were four times as likely as females to binge drink. There were no significant differences in the percentage of adults who binge drank by education and income levels (Figure 82).[22]

Sources: 2017-2019 Capital Area Behavioral Risk Factor Surveillance System, Barry County Only, 2009-2018 MDHHS Behavioral Risk Factor Survey

Figure 82: Percentage of Adults Who Binge Drank in the Past Month by Demographic Characteristics



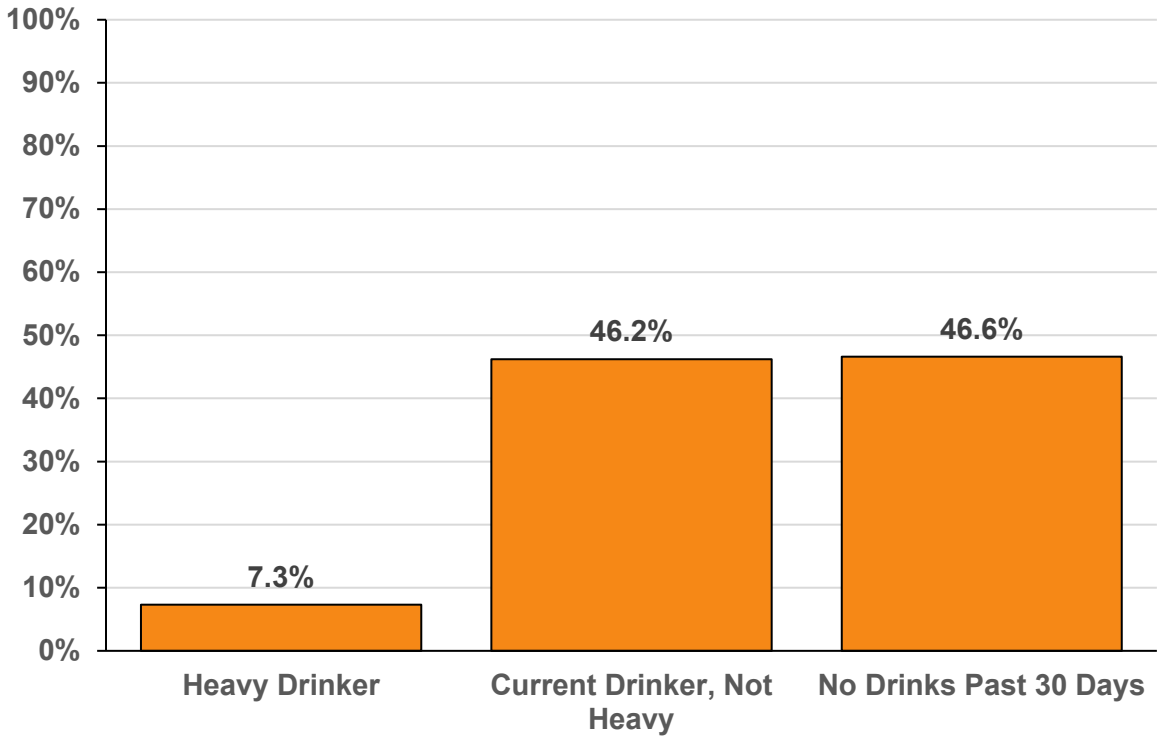
Source:
2017-2019 Capital Area Behavioral Risk Factor Survey, Barry County Only

Adults Who Drank Heavily During the Past 30 Days

For men, heavy drinking is defined as consuming two alcoholic drinks a day; for women, it is defined as consuming more than one alcoholic drink per day.[85] Heavy drinking may have some of the immediate consequences of binge drinking and is associated with an increased risk of chronic conditions such as hypertension and cardiac events.[86]

In Barry County, between 2017 and 2019, 7.3% of adults drank heavily within the past 30 days while 46.2% drank but not heavily and 46.6% had consumed no alcohol. (Figure 83).[22]

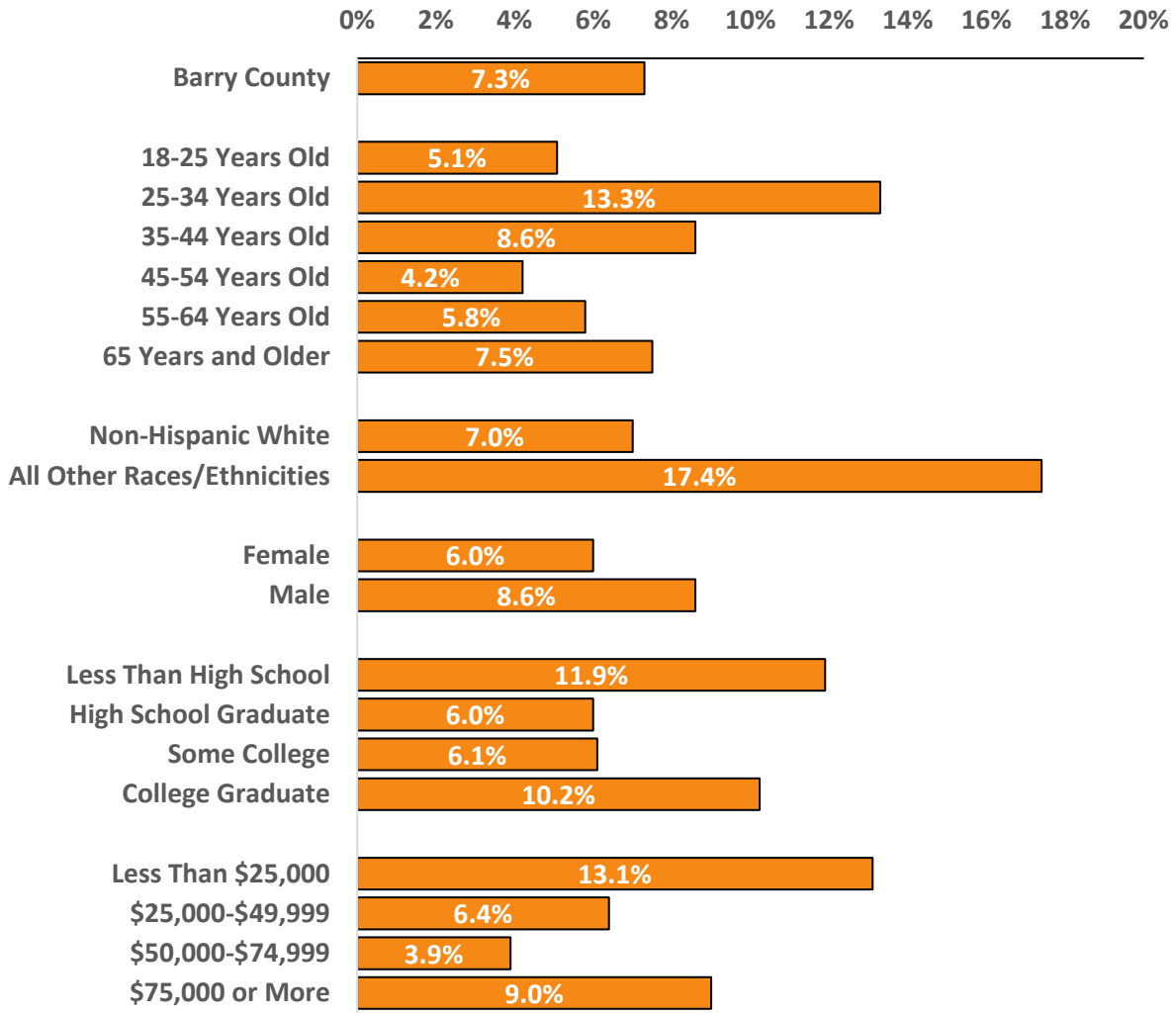
Figure 83: Demographic Characteristics of Heavy Drinking Among Adults in Barry County



Source: 2017-2019 Capital Area Behavioral Risk Factor Surveillance System, Barry County Only

Adults between the ages of 25 and 34 (13.3%) were most likely to report heavy drinking the 30 days prior to responding to the survey. Non-Hispanic White residents reported heavy drinking at a lower rate (7.0%) compared to all other races and ethnicities (17.4%). College graduates (10.2%) and those with less than a high school education (11.9%) were twice as likely to drink heavily compared to the other education levels. Lastly, those with a household income less than $25,000 and those with $75,000 or more were more likely to drink heavily compared to the other income groups (Figure 84).[22]

Figure 84: Adults Reporting Heavy Drinking Within the Past 30 Days by Demographic Group, Barry County Residents, 2017-2019



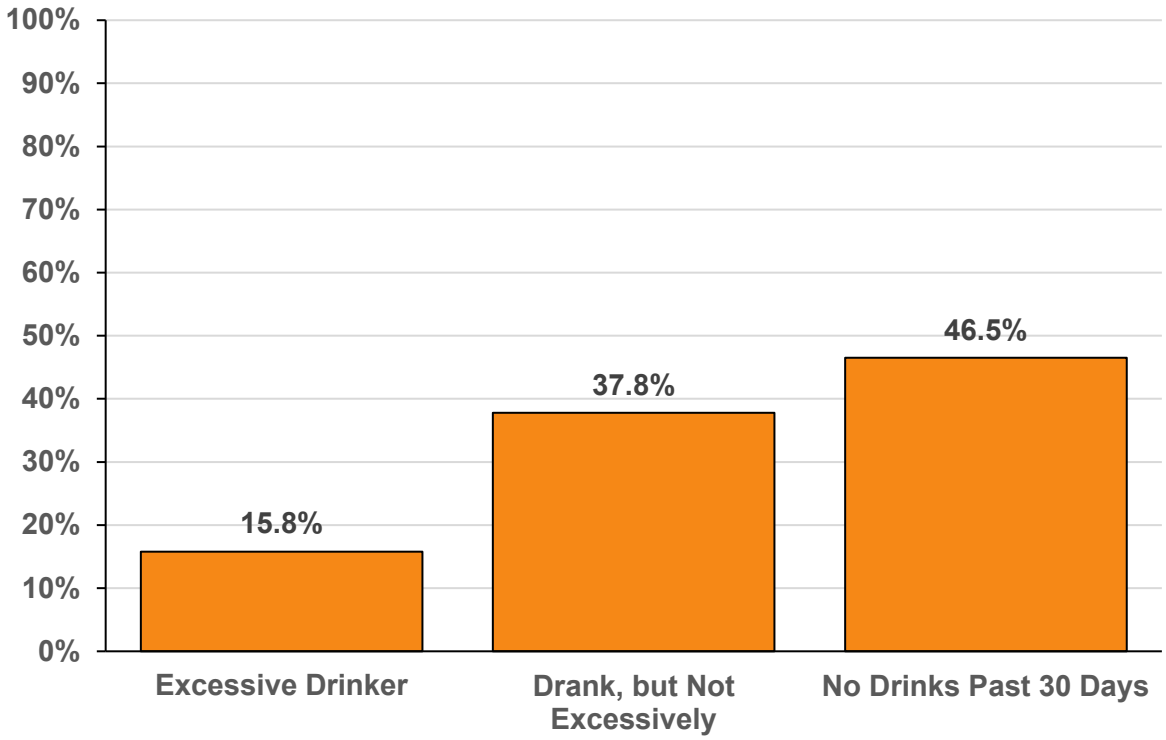
Source:
2017-2019 Capital Area Behavioral Risk Factor Survey, Barry County Only

Adults Who Drank Excessively During the Past 30 Days

To be considered excessive, a person is considered to have binge or heavily drank.[85]

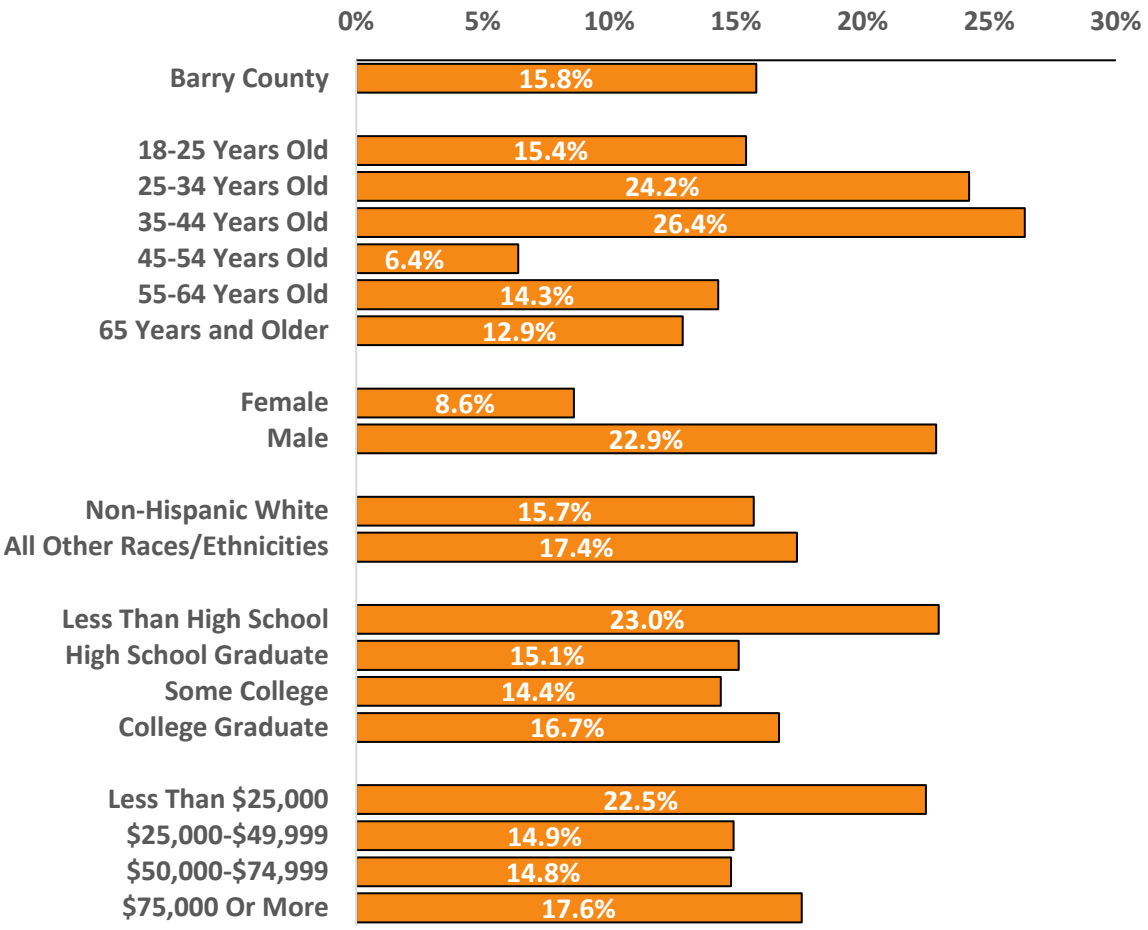
In Barry County, between 2017 and 2019, 15.8% reported drinking excessively, 37.8% consumed alcohol but not in excess and 46.5% did not drink during the past 30 days (Figure 85).[22]

Figure 85: Demographic Characteristics of Excessive Drinking Among Adults in Barry County



Adults between the ages of 25-34 (24.2%) and 35-44 (26.4%) were most likely to report excessive drinking compared to the other age groups. Male respondents (22.9%) were three times more likely to drink excessively than females (8.6%). Adults with less than a high school education (23.0%) and those with a household income less than $25,000 (22.5%) were more likely to drink excessively compared to other education and income groups (Figure 86).[22]

Figure 86: Percentage of Adults Who Drank Excessively Within the Past 30 Days by Demographic Group, Barry County Residents, 2017-2019

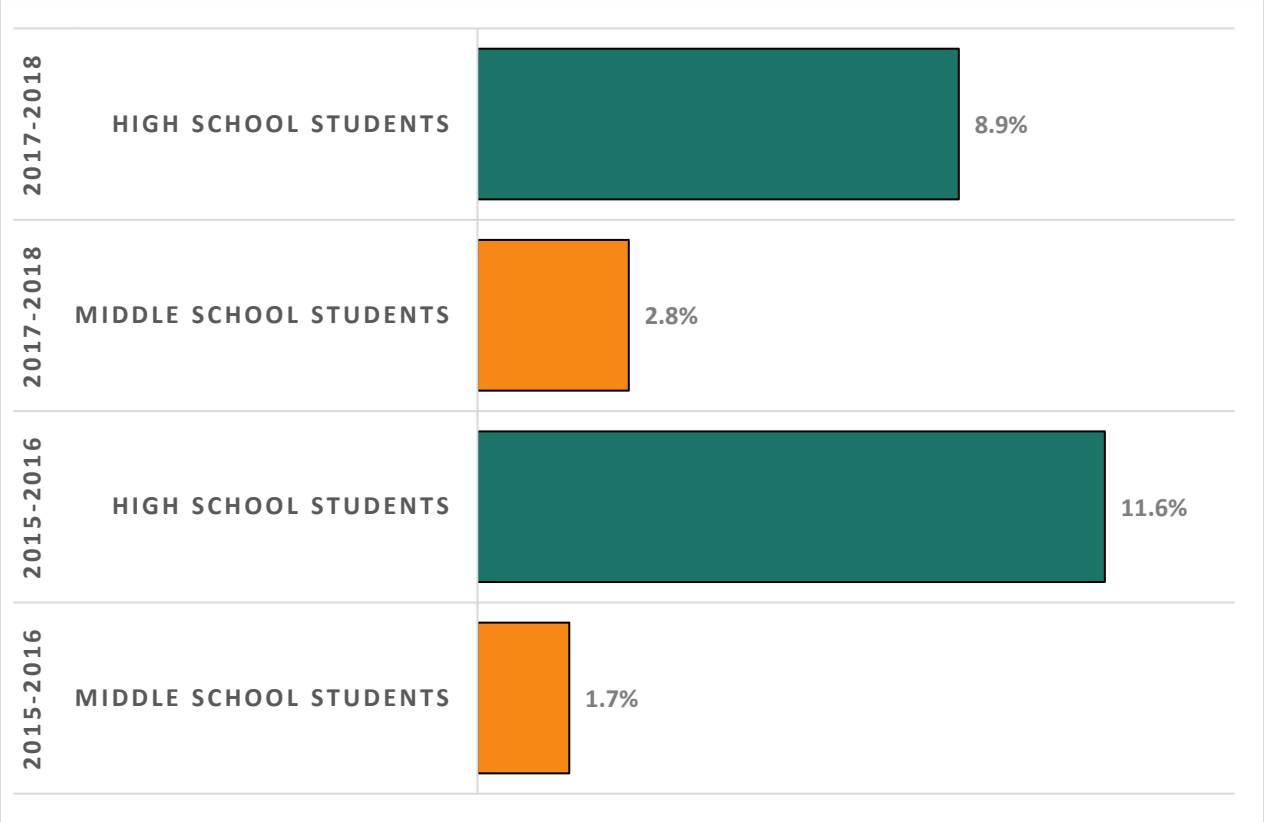


Source:
2017-2019 Capital Area Behavioral Risk Factor Survey, Barry County Only

Adolescents Who Binge Drank During the Past 30 Days

The percentage of students reporting binge drinking during the past 30 days increased among middle school students from 1.7% to 2.8% between 2015-2016 and 2017-2018. Among high school students, the percentage of students reporting binge drinking decreased from 11.6% to 8.9% between 2015-2016 and 2017-2018 (Figure 87).[57,77] As with previous data regarding adolescents, there has not been new data since the 2017-2018 school year due to response rates.

Figure 87: Binge Drinking Among Adolescents in Barry County



Sources:
2017-2018 Michigan Profile for Healthy Youth – Alcohol and Other Drugs Summary Table
2015-2016 Michigan Profile for Healthy Youth – Alcohol and Other Drugs Summary Table

Marijuana Use in Adults During the Past 30 Days

Although still illegal in the United States, marijuana use was decriminalized in Michigan for medical use in 2008 and legalized recreational use in 2018 for adults. Among adults in Barry County from 2017 to 2019, 10.2% reported using marijuana in the past 30 days (Figure 88).[22]

Figure 88: Any Marijuana Use Among Adults in Barry County During the Past 30 Days

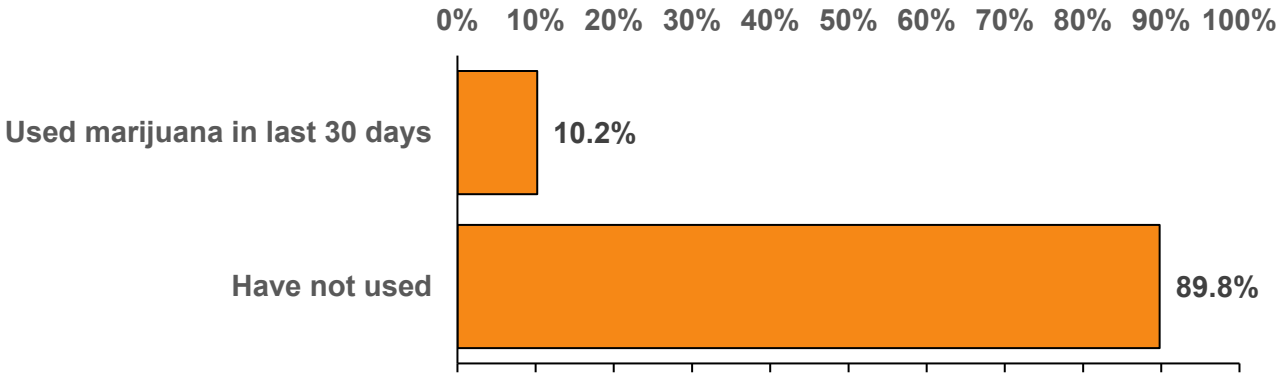
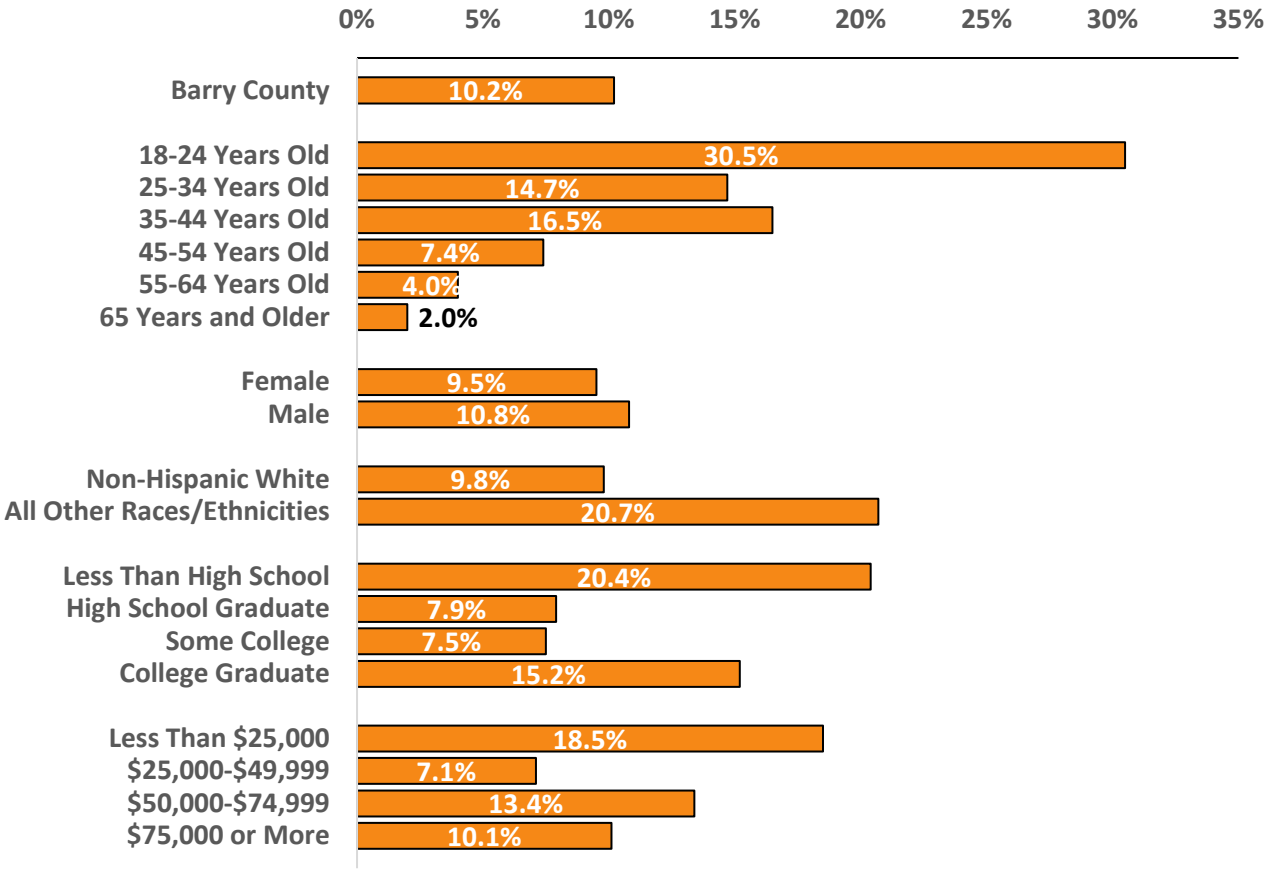


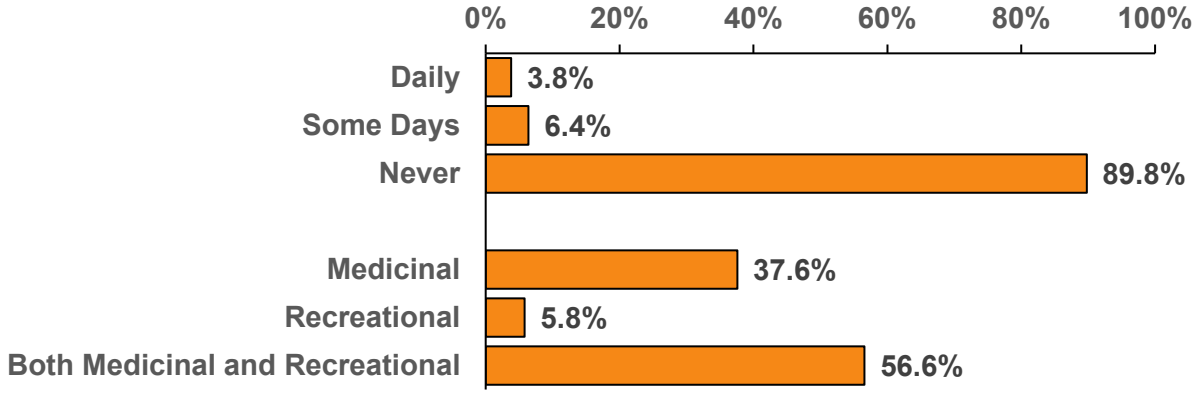
Figure 89: Demographic Characteristics of Adult Marijuana Use in Barry County



The percentage of adults in Barry County using marijuana in the past 30 days was highest in the 18-24 age group (30.5%) compared to the other age groups. More adults with less than a high school education (20.4%) and college graduates (15.2%) used marijuana compared to high school graduates (7.9%) and those with some college (7.5%) (Figure 74).[22]

Between 2017 and 2019, just under 1 in 20 adults in Barry County (3.8%) reported using marijuana daily within the past 30 days. When asked why they consumed marijuana, 37.6% responded it was for medical use, while 5.8% used it only recreationally and 56.6% used marijuana for both purposes (Figure 90).[22]

Figure 90: Marijuana Use in the Past 30 Days and Reason for Use Among Barry County Adults

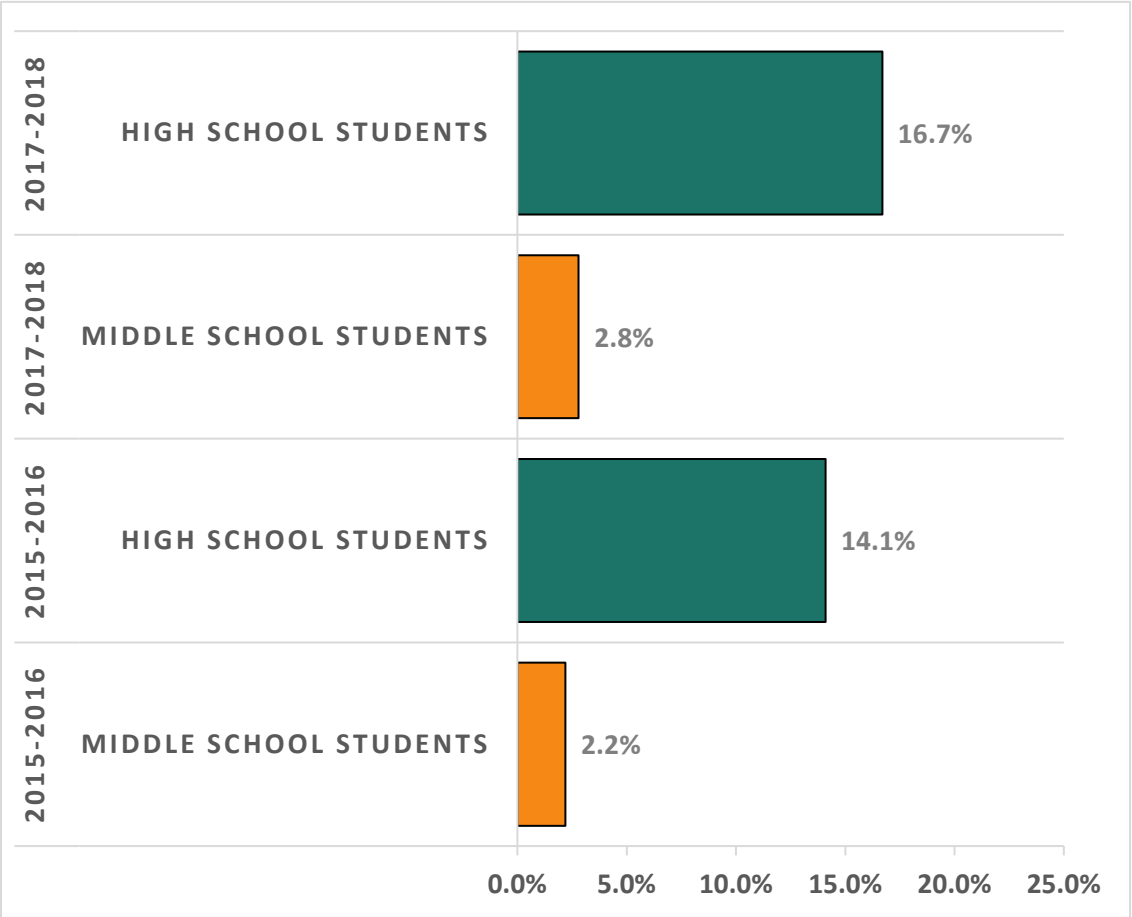


Source: 2017-2019 Capital Area Behavioral Risk Factor Surveillance System, Barry County Only

Adolescents Who Have Used Marijuana During the Past 30 Days

The percentage of students reporting using marijuana during the past 30 days in Barry County increased among middle school (from 2.2% to 2.8%) and high school students (from 14.1% to 16.7%) from 2015-2016 to 2017-2018 (Figure 91).[57,77]

Figure 91: Marijuana Use Among Adolescents in Barry County

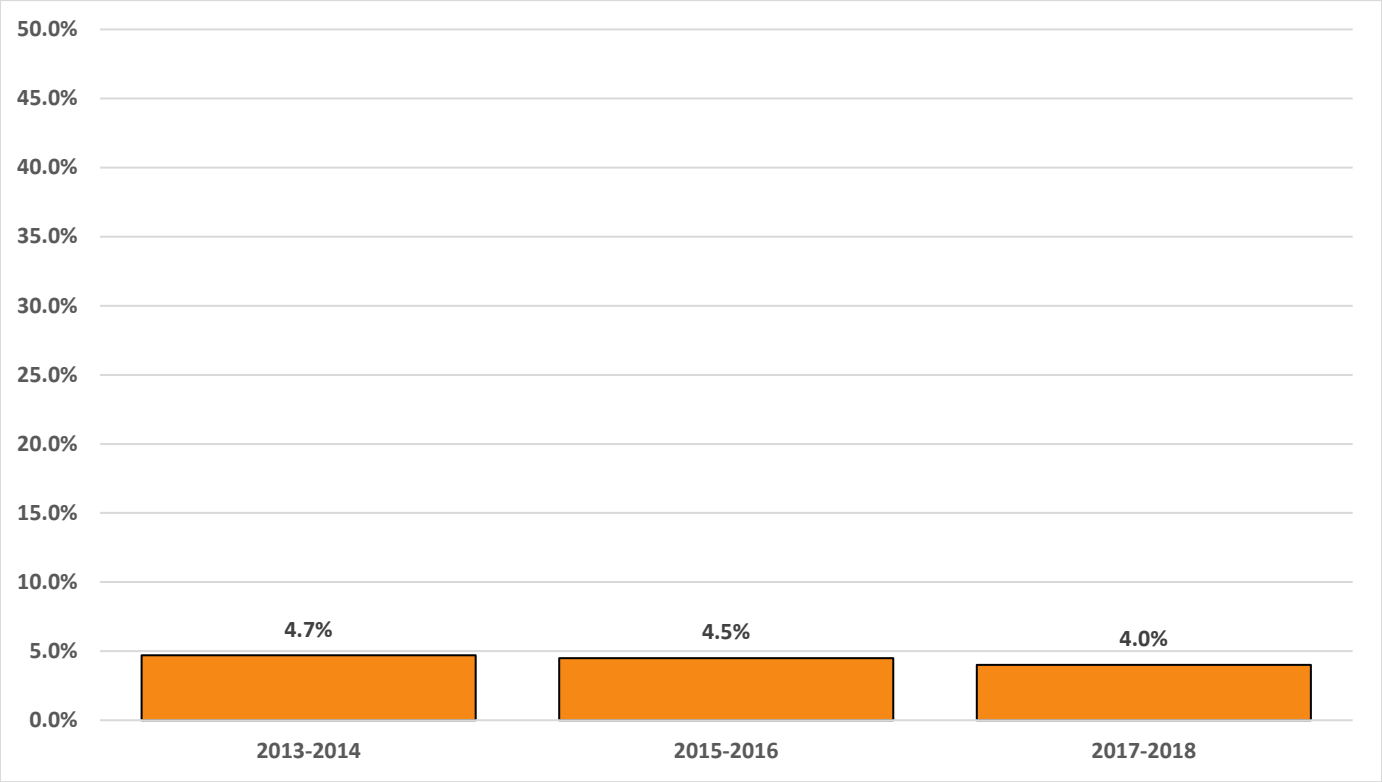


Sources:
2017-2018 Michigan Profile for Healthy Youth – Alcohol and Other Drugs Summary Table
2015-2016 Michigan Profile for Healthy Youth – Alcohol and Other Drugs Summary Table

Adolescents Who Have Used Marijuana Prior to Age 13

There has been a slight decrease in the percentage of high school students reporting having used marijuana prior to the age of 13 from 4.7% in 2015-2016 to 4.0% in 2017-2018 (Figure 92).[57,77]

Figure 92: Adolescents Using Marijuana Prior to Age 13 in Barry County



Sources:
2017-2018 Michigan Profile for Healthy Youth – Alcohol and Other Drugs Summary Table
2015-2016 Michigan Profile for Healthy Youth – Alcohol and Other Drugs Summary Table

Nicotine Use

Cigarette smoking contributes to multiple diseases and premature death. Smoking can increase the risk of various cancers, cardiovascular disease, respiratory conditions, low birthweight and other adverse health outcomes. Measuring the prevalence of smoking in the population can alert communities to potential adverse health outcomes and be valuable for assessing the need for cessation programs or the effectiveness of existing programs.[87]

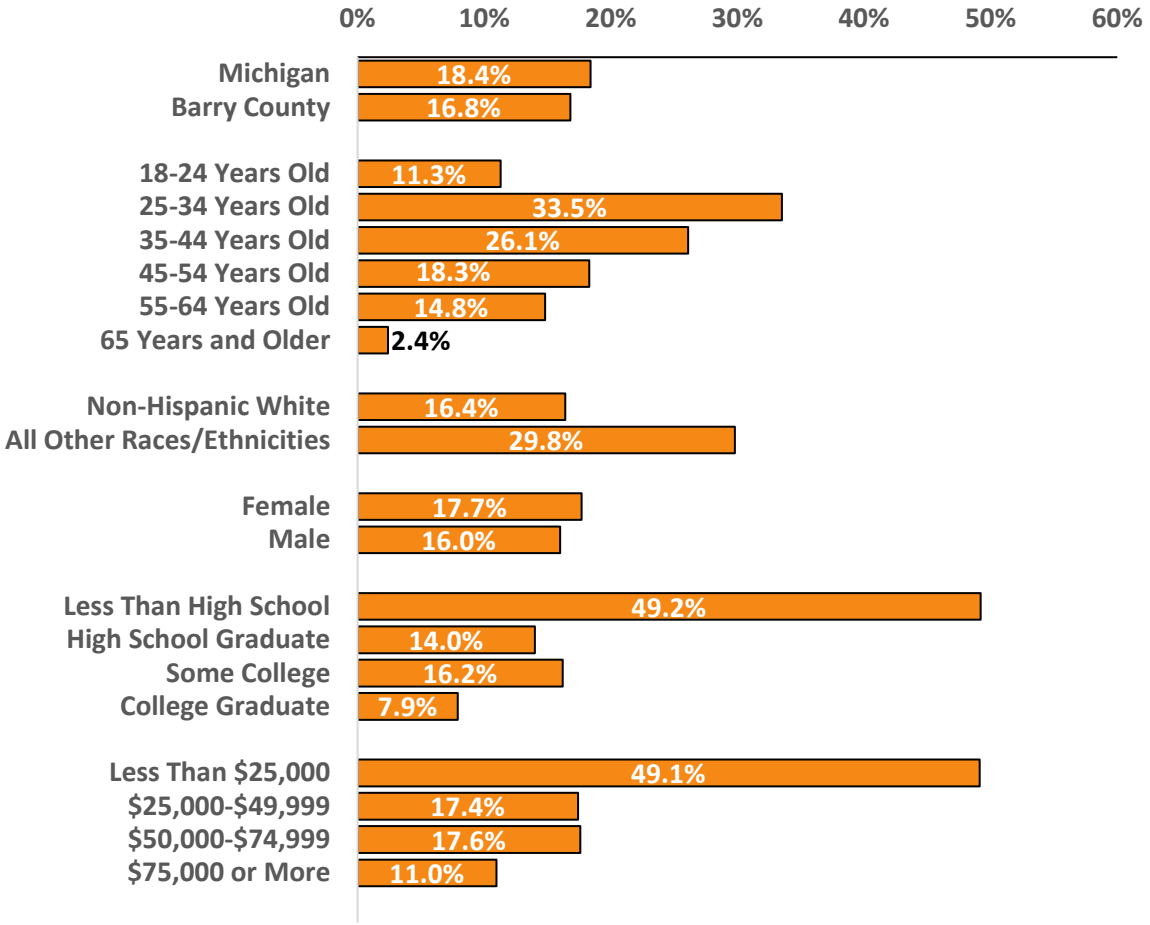
Indicators

- Adults Who Smoke
- Adults Who Use Vaping Products
- Adolescents Who Smoked Cigarettes During the Past 30 Days

Adults Who Smoke

Between 2017 and 2019, the percentage of adults who reported smoking in Barry County (16.8%) was lower than in Michigan (18.4%). More than 33% of 25- to 34-year-olds and 26.1% of 35- to 44-year-olds reported being smokers, nearly twice as high as those in the 45- to 54-year-old and 55- to 64-year-old age groups. Non-Hispanic White people (16.4%) were almost half as likely to report that they were smokers compared to all other races and ethnicities combined (29.8%). Those with less than a high school education and those with a household income less than $25,000 were two to three times more likely to be smokers than the other education and income groups (Figure 93).[22,23]

Figure 93: Demographic Characteristics of Adults Who Smoke in Barry County

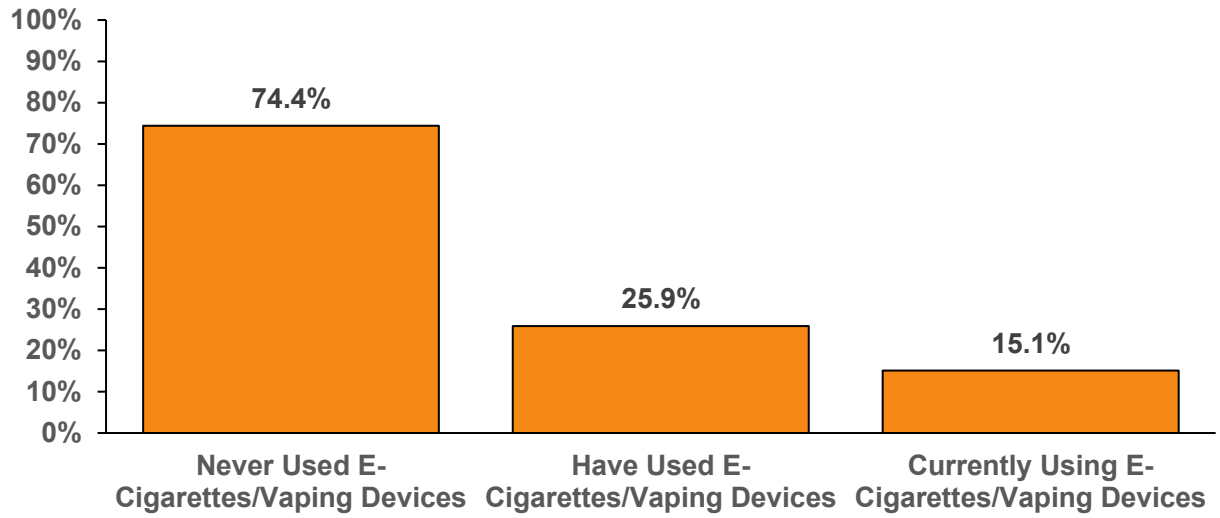


Sources:
2017-2019 Capital Area Behavioral Risk Factor Survey, Barry County Only
2020 MDHHS Behavioral Risk Factor Survey

Adults Who Use Vaping Products

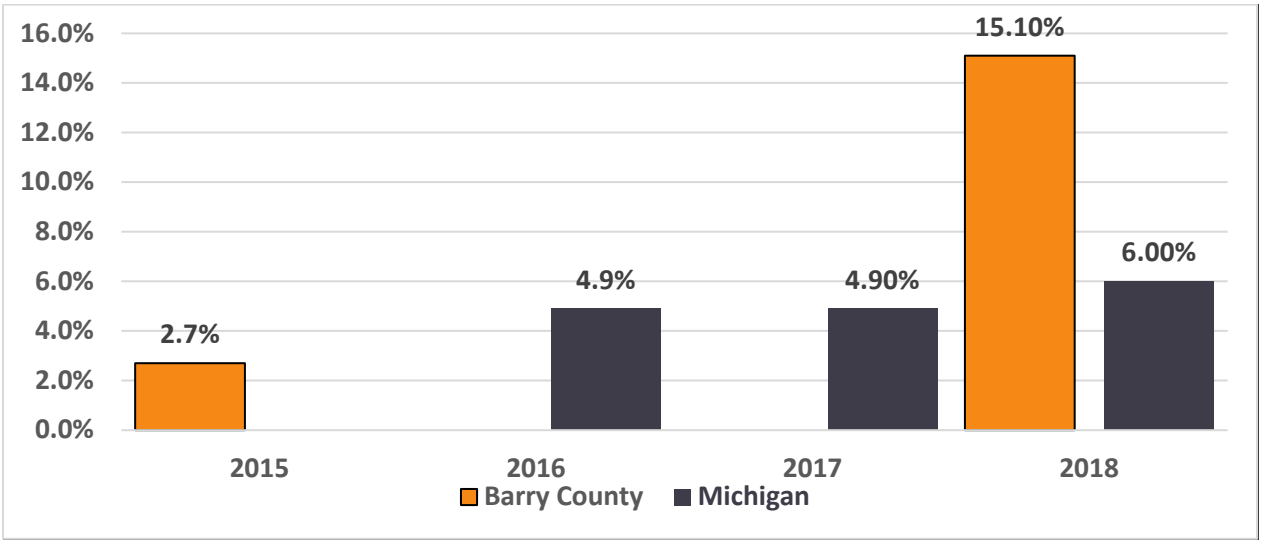
A growing trend among tobacco and marijuana users is using e-cigarettes or vaping devices. Smokeless and odorless, these electronic devices provide an alternative to traditional smoking. Among adult smokers in Barry County, over one-quarter of adults have ever used e-cigarette and vaping devices, while 74.4% reported never using them and 15.1% reported using these devices on some or all days in the last month during the 2017-2019 survey period (Figure 94).[22]

Figure 94: Adults Who Smoke in Barry County



Over time, use of e-cigarette or vaping products has increased dramatically in Barry County. Most residents who have used e-cigarettes stated they did so to either try to quit smoking (43.1%) or to provide less harmful alternative to smoking (25.8%).

Figure 95: Adults Who Have Used E-Cigarettes or Vaping Products in the Past 30 days, 2015-2018



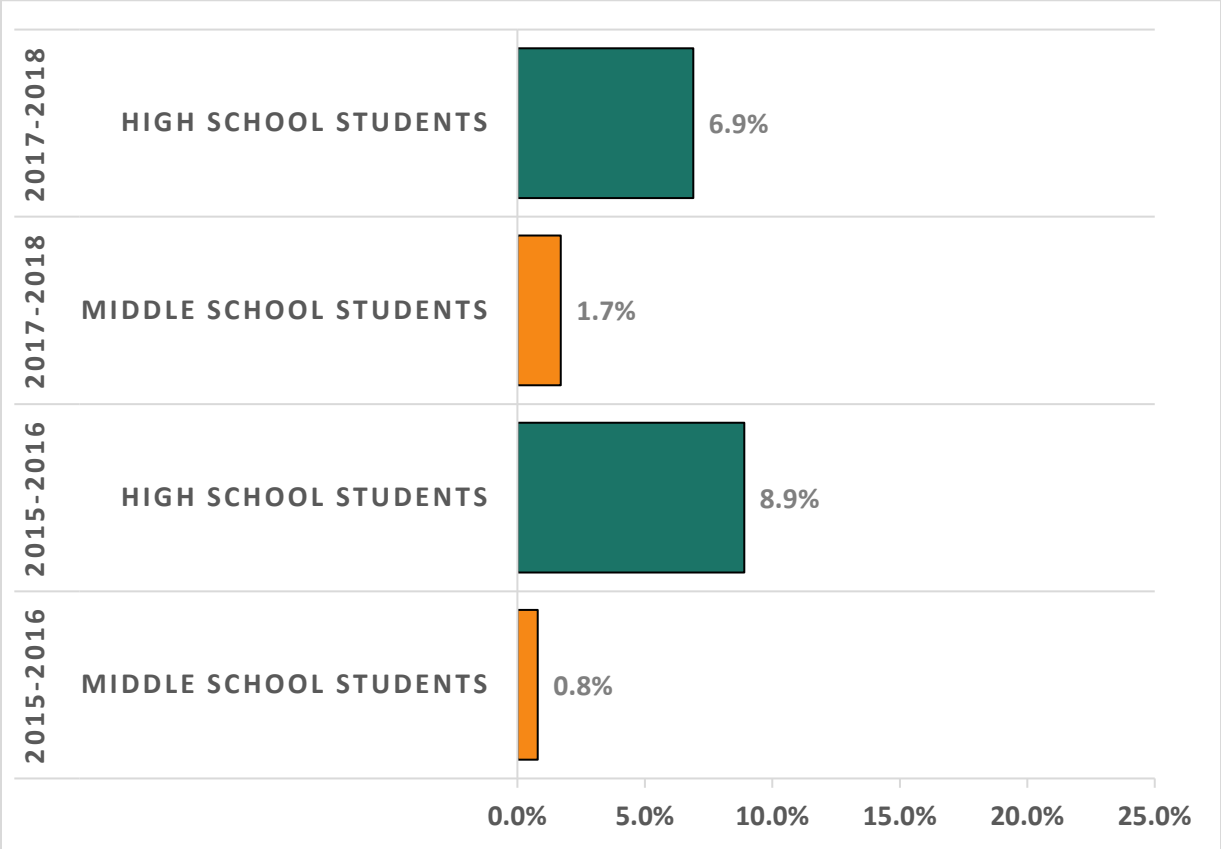
Source: 2017-2019 Capital Area Behavioral Risk Factor Surveillance System, Barry County Only

Note: MDHHS data for vaping only began in 2016

Adolescents Who Smoked Cigarettes During the Past 30 Days

The percentage of high school students reporting having smoked cigarettes during the past 30 days in Barry County decreased from 2015-2016 to 2017-2018 from 8.9% to 6.9%. However, middle school students reported an increase from 0.8% to 1.7% over the same time period (Figure 96).[57,77]

Figure 96: Adolescents Who Smoked Cigarettes During the Past 30 Days



Sources:
2017-2018 Michigan Profile for Healthy Youth – Alcohol and other Drugs Summary Table
2015-2016 Michigan Profile for Healthy Youth – Alcohol and other Drugs Summary Table

Maternal and Child Health

Poor maternal and child health is detrimental to the health of individuals and communities and can have immediate and lasting effects.[88] Maternal and child health refers to the health and well-being of women, infants, children and families.[89] Indicators used to assess overall well-being include infant mortality and asthma hospitalizations among children under 18.

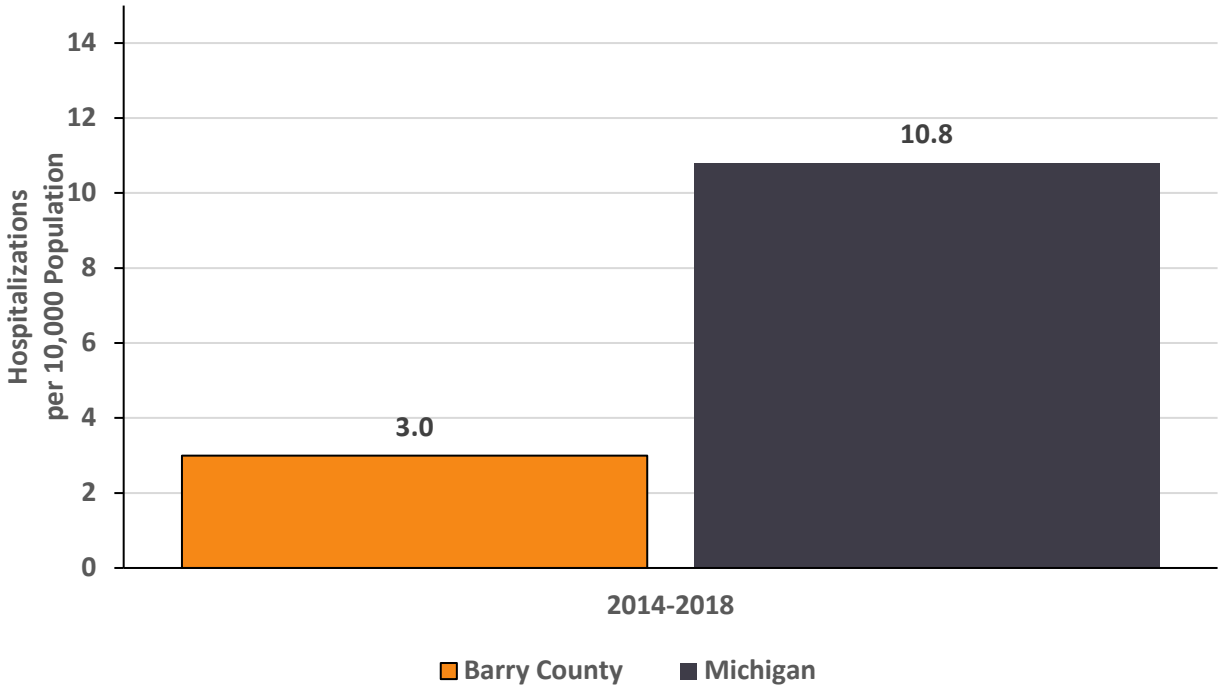
Indicators

- Preventable Asthma Hospitalization Among Youths Under 18
- Infant Mortality

Asthma Hospitalization Among Youths Under 18

In Barry County, there were an average of three asthma-related hospitalizations annually for children under 18 years old per 10,000 residents between 2014 and 2018, which was much lower than Michigan (10.8) (Figure 97).[64]

Figure 97: Asthma-Related Hospitalizations per 10,000 Population



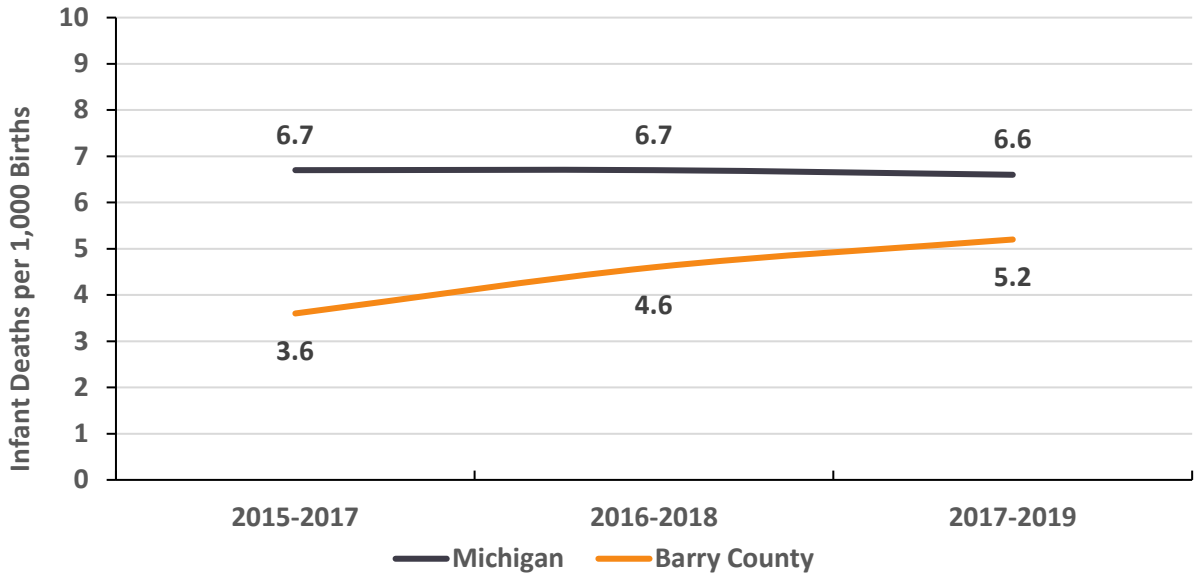
Source: 2003-2019 Michigan Resident Inpatient Files created by the Division for Vital Records and Health Statistics, Michigan Department of Health and Human Services

Infant Mortality

Infant mortality is the death of an infant before their first birthday.[90] The infant mortality rate is calculated as the number of infants who died within their first year of life per 1,000 live births. The leading causes of infant deaths include congenital abnormalities, low birthweight, preterm birth, pregnancy complications and unintentional injuries. Maternal risk factors highly associated with infant mortality include advanced maternal age, obesity, diabetes, smoking and substance misuse.

The infant mortality rate was lower in Barry County than in Michigan between 2015-2017 and 2017-2019. The infant mortality rate has increased in Barry County from 3.6 deaths per 1,000 live births in 2015-2017 to 5.2 deaths per 1,000 live births in 2017-2019. In Michigan, the infant mortality rate remained stable between 2015-2017 and 2017-2019 (6.6-6.7 infant deaths per 1,000 live births) (Figure 98).[91]

Figure 98: Three-Year Moving Average Infant Mortality Rate in Barry County and Michigan



Source: Michigan Infant Mortality, Michigan Department of Health and Human Services, Division for Vital Records and Health Statistics

Communicable Diseases

Non-medical immunization waivers are a “written statement by parents/guardians describing their religious or philosophical (other) objections to specific vaccine/vaccines.”[91] High non-medical wavier rates in a community can leave communities susceptible to communicable diseases such as measles, chickenpox and pertussis.[92]

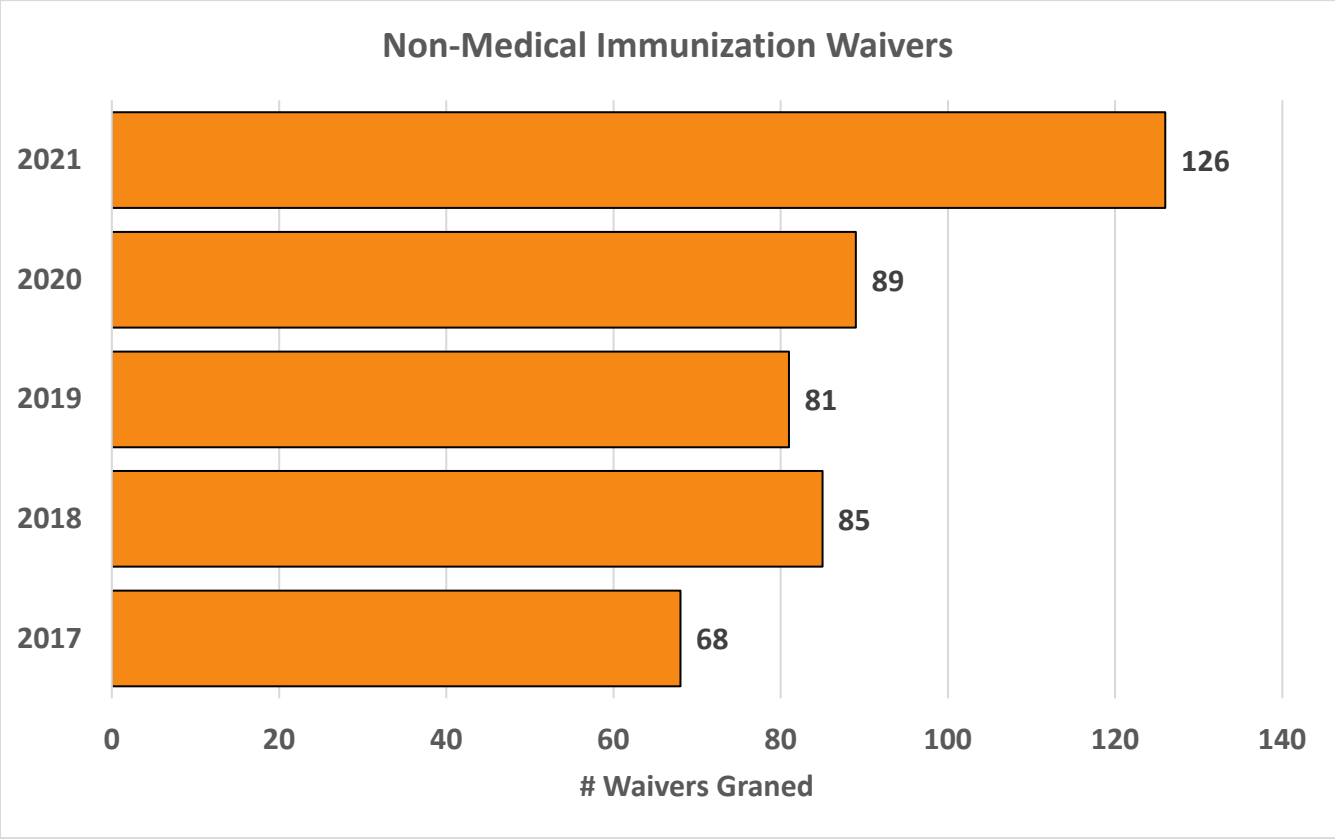
Indicators

- Non-Medical Immunization Waivers Granted

Non-Medical Immunization Waivers Granted

The number of non-medical immunization waivers granted for children has increased from 68 in 2017 to 126 in 2021.[93] This increasing trend is concerning as fewer vaccinations for school aged children allows for more opportunity for vaccine-preventable diseases to reach outbreaks and impact the lives of those infected and those around them.

Figure 99: Non-Medical Immunization Waivers Granted



Source: Barry-Eaton District Health Department, Waiver Log, 2017-2021

Community Resources

Description of the Health System

In this report, the term "health system" is defined using the World Health Organization's definition from their report *Everybody's Business: Strengthening Health Systems to Improve Health Outcomes,* which includes organizations that both provide direct care or support medical care, as well as public health institutions, behavioral health and other human service organizations.

> "*All organizations, people and actions whose primary intent is to promote, restore or maintain health. This includes efforts to influence determinants of health as well as more direct health-improving activities*."
>
> **—World Health Organization, 2007**[94]

Hospitals in Barry County

Spectrum Health Pennock, the only hospital in the county, is a 49-bed community hospital located in Hastings. Spectrum Health Pennock offers a wide range of services including: emergency services, primary care (including obstetrics and gynecology) and surgery (e.g., orthopedics).

Federally Qualified Health Centers (FQHC)

There is one Federally Qualified Health Center in Barry County: Cherry Health's Barry Community Health Center. Cherry Health is the largest FQHC in Michigan, serving six counties. Cherry Health has approximately 800 employees and a network of over 70 physicians and advanced practice providers specializing in primary care/family medicine, pediatrics, obstetrics/gynecology, optometry, oral health, behavioral health and psychiatry.[95]

FQHCs are a critical piece of the social safety net. They provide an array of health services to anyone, regardless of their insurance status and ability to pay. To qualify as an FQHC site, a community must demonstrate a shortage of providers. Barry County qualifies for this under the Governor-Designated Secretary-Certified Shortage Areas.

Health Care Providers in Barry County

According to data housed by the Health Resource Service Administration, Barry County has one primary care physician for every 2,910 residents and one dentist for every 3,620 residents. In contrast, provider ratios for the state overall are one primary care physician for every 1,270 residents and one dentist for every 2,130 residents.[96] A comprehensive list of health care providers by specialty in Barry County can be found in Tables B2 and B3 in Appendix B.

Mental Health Providers

There are two pieces of the mental health system in Michigan: public and private. A comprehensive list of the number of mental health providers in Barry County can be found in Tables B2 and B3 in Appendix B.

The public system in Barry County is administered by the Barry County Community Mental Health Authority (BCCMHA). The BCCMHA provides behavioral health and substance use services to about 1,700 individuals annually. Those services may include behavioral health services, co-occurring mental health services, and services for individuals with intellectual disabilities, children with severe emotional disturbances and individuals with autism.

In addition to what may be considered traditional community mental health services, the BCCMHA provides an array of additional services to support individuals, such as community living supports, respite care and employment services.

The private system includes all mental and behavioral health providers who accept commercial insurance or cash payments. Access to care requires not only financial coverage but also access to providers.

In Barry County, there is one mental health provider for every 820 residents. By comparison, there is one mental health provider for every 360 residents in Michigan.[96]

Government Entities

The protection of the entire population's health as outlined in the Michigan Constitution and delegated to local governing entities. The Barry-Eaton District Health Department is responsible for performing the following activities:

- Investigating the causes of disease, especially outbreaks of diseases
- Providing care for individuals with severe communicable disease or infection
- Mitigating environmental or disease-related health hazards
- Routinely inspecting facilities with a high likelihood of impacting public health (e.g., food service facilities, public pools, public and private wells, and septic systems)

Existing Resources in the Community

A list of assets was provided for discussion during the June 2021 meeting to streamline the asset inventory process for this cycle. Only Barry County's assets and those traditionally used in Community Health Needs Assessments were presented. After discussion amongst the Advisory Committee members, local economic assets were chosen with further instruction to explore how they should be mapped and what specific resources would be included.

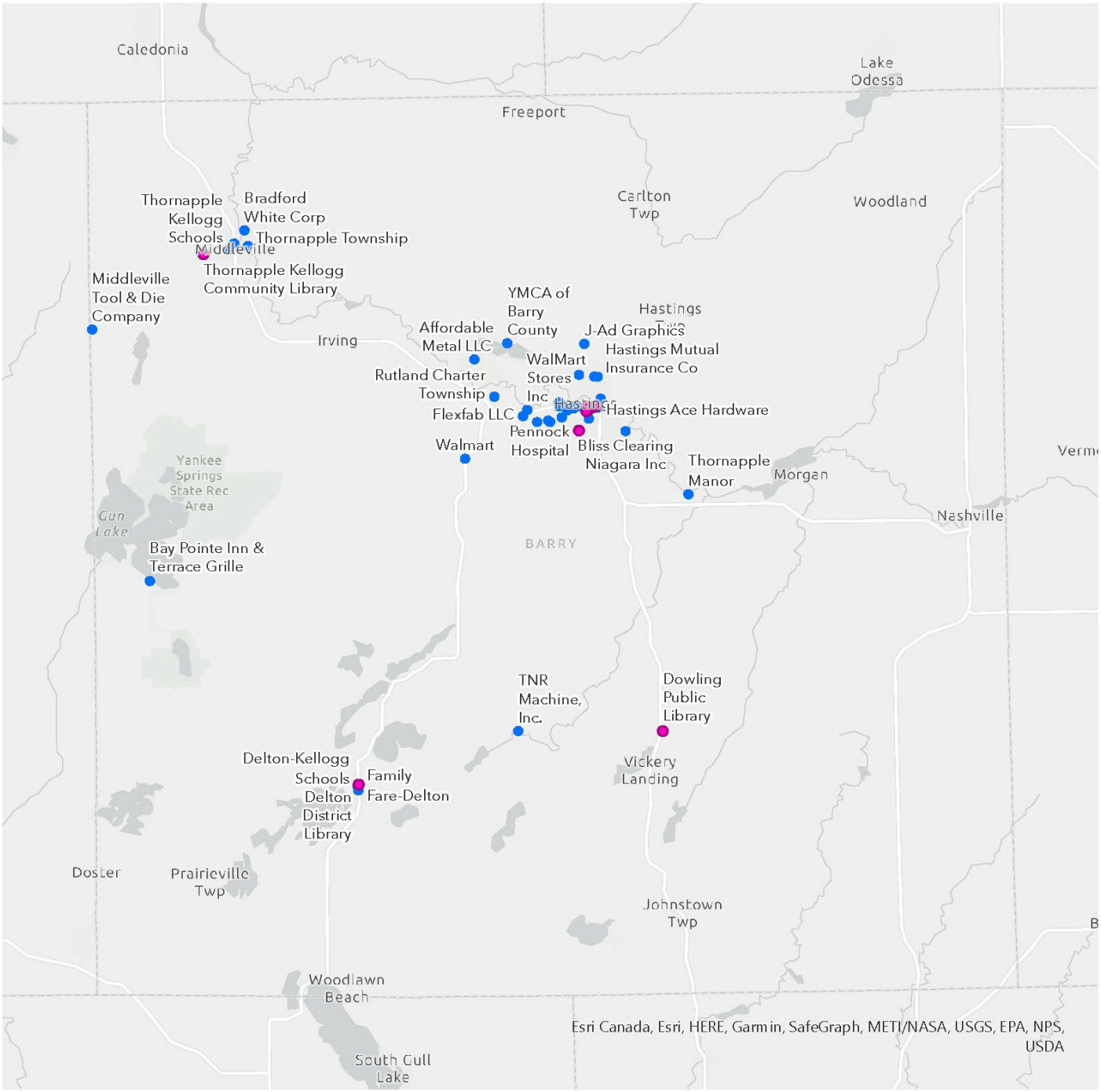
Barry-Eaton District Health Department worked with the Barry County Chamber of Commerce to identify appropriate and valuable economic assets (Table 14) and present them on a map. Barry County's Geographical Information System department supported the final development of the maps seen in the report.

Table 14: **Identified Community Assets**

Health Care Resources	Mental Health Providers/Facilities
	Free Clinics
	Substance Abuse Treatment and Recovery Providers
	Hospitals
Institutions	K-12 Schools/Districts
	Government Resources
Public Safety	Domestic Violence & Crisis Response Orgs
Food System	Food Pantries/Banks/Commodities
	Grocery Stores
Local Economy	Unemployment & Job-Placement Services
Community Involvement	Citizen Groups & Coalitions

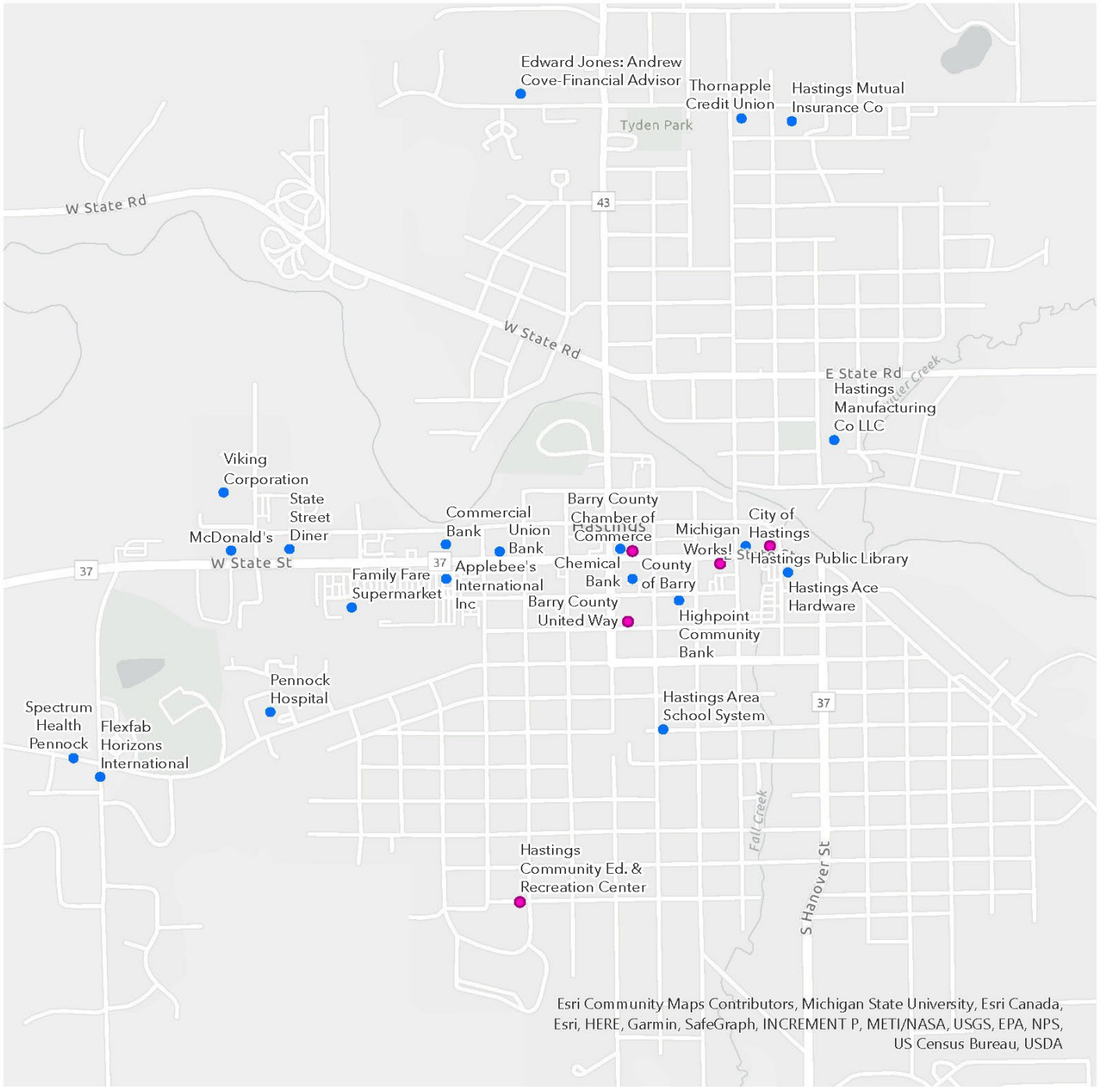
The maps in Figures 100 and 101 highlight the identified community assets found in Table 15. These assets center on the county's largest employers and include assets that help residents acquire new skills or further develop skills they currently have. Figure 100 is a county-level view of the locations of all discussed assets, both for largest employers and upskilling resources.

Figure 100: Major Employers and Community Resources, Barry County



The second map, Figure 101, shows a closer view of the City of Hastings and the related resources.

Figure 101: Major Employers and Community Resources, City of Hastings



Community Resource
Employer

Barry County Land Information Services
9/20/2021

Table 15: List of Community Assets

Name of Resource	Address	City	Zip	Asset Type
Affordable Metal LLC	2995 W. Airport Rd.	Hastings	49058	Employer
Applebee's International Inc.	638 W. State St.	Hastings	49058	Employer
Bay Pointe Inn & Terrace Grille	11456 Marsh Rd.	Shelbyville	49344	Employer
Bliss Clearing Niagara Inc.	1004 E. State St.	Hastings	49058	Employer
Bradford White Corp	200 Lafayette St.	Middleville	49333	Employer
Chemical Bank – Hastings	241 W. State St.	Hastings	49058	Employer
Chemical Bank – Middleville	303 Arlington St.	Middleville	49333	Employer

City of Hastings	201 E. State St.	Hastings	49058	Employer
Commercial Bank	629 W. State St.	Hastings	49058	Employer
County of Barry	220 W. State St.	Hastings	49058	Employer
Delton-Kellogg Schools	327 N. Grove St	Delton	49046	Employer
Edward Jones: Andrew Cove -Financial Advisor	421 W. Woodlawn Ave.	Hastings	49058	Employer
Family Fare – Delton	103 N. Grove St.	Delton	49046	Employer
Family Fare Supermarket	902 W. State St.	Hastings	49058	Employer
Flexfab Horizons International	102 Cook Rd.	Hastings	49058	Employer
Flexfab LLC	1699 W. M43 Hwy.	Hastings	49058	Employer
Hastings Ace Hardware	200 S. Boltwood	Hastings	49058	Employer

Hastings Area School System	232 W. Grand St.	Hastings	49058	Employer
Hastings Fiber Glass Products	770 Cook Rd.	Hastings	49058	Employer
Hastings Manufacturing Co. LLC	325 N. Hanover St.	Hastings	49058	Employer
Hastings Mutual Insurance Co.	404 E. Woodlawn Ave.	Hastings	49058	Employer
Highpoint Community Bank	150 W. Court St.	Hastings	49058	Employer
J-Ad Graphics	1351 N. M-43 Hwy.	Hastings	49058	Employer
McDonald's	1215 W. State St.	Hastings	49058	Employer
Middleville Tool & Die Company	1900 Patterson Rd.	Middleville	49333	Employer
Rutland Charter Township	2461 Heath Rd.	Hastings	49058	Employer

Spectrum Health Pennock	1009 W. Green St.	Hastings	49058	Employer
State Street Diner	1105 W. State St.	Hastings	49058	Employer
Thornapple Credit Union - Hastings	202 E. Woodlawn Ave.	Hastings	49058	Employer
Thornapple Kellogg Schools	509 W. Main St.	Middleville	49333	Employer
Thornapple Manor	2700 Nashville Rd.	Hastings	49058	Employer
Thornapple Township	200 E. Main	Middleville	49333	Employer
TNR Machine, Inc.	8951 S. Cedar Creek Rd.	Dowling	49050	Employer
Union Bank	529 W. State St.	Hastings	49058	Employer
Viking Corporation	210 N. Industrial Park Dr.	Hastings	49058	Employer
YMCA of Barry County	2055 Iroquois Tr.	Hastings	49058	Employer
Walmart Stores Inc.	1618 W. M-43 Hwy.	Hastings	49058	Employer

Barry County Chamber of Commerce	221 W. State St.	Hastings	49058	Resource
Barry County United Way	231 S. Broadway St.	Hastings	49058	Resource
Delton District Library	330 N. Grove St.	Delton	49046	Resource
Dowling Public Library	1765 E. Dowling Rd.	Hastings	49058	Resource
Hastings Community Ed. & Recreation Center	520 W. South St.	Hastings	49058	Resource
Hastings Public Library	227 E. State St.	Hastings	49058	Resource
Michigan Works!	130 E. State St.	Hastings	49058	Resource
Thornapple Kellogg Community Library	3885 Bender Rd.	Middleville	49333	Resource

Additional Resources

Beyond strictly workforce development, there are also resources to attract employees and prospective talent. Several initiatives aim to connect with Barry County students to meet future workforce needs. Examples of these are:

- MAVIN for Employers (https://massp.com/mavin)
- Discover Manufacturing (https://www.discover-manufacturing.com/)
- Barry County Career Tours (Barry County Chamber & Economic Alliance)

The following programs in the community help aid individuals who were previously incarcerated connect with and rebuild their lives through job training, employment, and access to housing and resources.

- Starting Over for Success (www.startingoverforsuccess.org)
- Clean Slate Initiative via MichiganWorks! (https://www.miworks.org/clean-slate)

Prioritization

The prioritization of Barry County significant health needs occurred through a best-practice, community-engaged approach. This approach organized the various themes and indicators from data collection into key prioritized categories, which were then used by stakeholders to select the top significant health needs.

Methodology

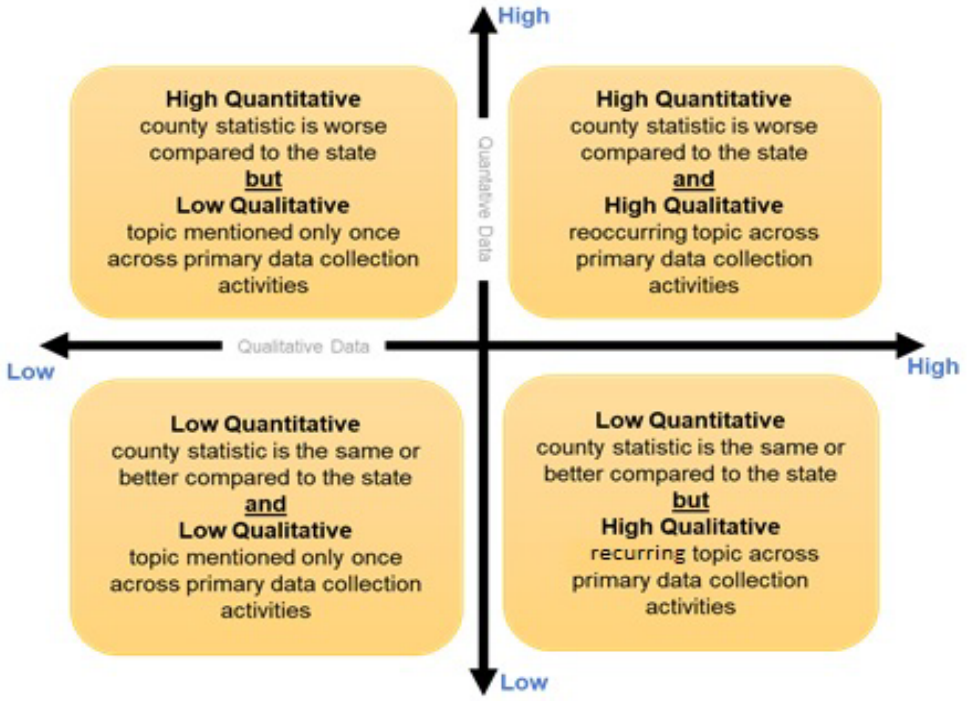
Priority Category Identification

Our first step in organizing our priorities was to find a prioritization matrix (Figure 85) to help evaluate the data collected from all of our assessment activities. Depending on the specific findings of the quantitative data or the frequency of health themes that occurred in the qualitative data, data or themes were grouped into one of four categories: High Quantitative/High Qualitative, High Quantitative/Low Qualitative, Low Quantitative/Low Qualitative and Low Quantitative/High Qualitative.[97]

The indicators and themes identified as High Quantitative/High Qualitative were highlighted in the data preview event along with those with positive or negative trends, and emerging needs.

The workgroup and Steering Committee used a facilitated discussion to collectively combine the quantitative indicators into a set of health issues to be used in the prioritization event.

Figure 102: Health Needs Matrix



Source: Truven Health Analytics and Beaumont Health Community Health & Outreach. Community Health Needs Assessment – 2016, Beaumont Health

Significant Health Need Prioritization

Community prioritization of significant health needs data used a weighted criteria approach. The criteria and associated weights were discussed and approved by the Steering Committee (Table 17). The category groupings were voted on in each of the four criteria areas (Table 16). After the vote, each category rank was entered into the weighted prioritization matrix.

The sum of the participants' ranks for each health issue was multiplied by the weight of each criterion, creating four scores per health issue. These four scores were combined into one final overall Score and was then used to rank the health priorities. The five issues with the lowest score would be the five significant health needs.

Identifying and Prioritizing Health Needs

In November 2021, Barry-Eaton District Health Department hosted a community virtual "data preview." During this event, findings from the assessment were reviewed by members of the steering and advisory committees, Spectrum Health Pennock staff, and other individuals living or working in Barry County. Barry-Eaton District Health Department advertised the meeting on their website, social media pages and emails to individuals on the project's contact list.

Health department staff highlighted assessment data that:

- Were categorized as high quantitative and high qualitative using the health needs matrix (Figure 102)
- Showed significant change, whether positive or negative
- Was unexpected
- Stood out when compared to the region, state or national data
- Included past Barry County community priorities from previous assessments

In addition to presenting quantitative measures, findings from the community and health care provider surveys, asset mapping surveys, underserved focus groups, and county leadership and key stakeholder interviews were presented. Interspersed throughout the presentation were short, facilitated questions about the data, and health department staff led the group in a brief conversation about the underlying factors that may be present. The audience could request additional data to clarify or better understand a presented health issue during this event.

Time Between Data Preview Event and Prioritization Event

Between the data preview and the prioritization event, two things happened.

1. Health department staff used the quantitative indicators to group those indicators into 16 health issues (Table 16).

2. Additional indicators on marijuana and e-cigarette use were added based on community feedback

3. The Steering Committee reviewed the criteria used to evaluate all the health issues. The Steering Committee was guided by health department staff and selected four criteria to evaluate the health issues: (1) seriousness; (2) control; (3) capacity; and (4) catalytic. After confirmation of the criteria, weights were assigned to each of the four criteria (Table 17).

Prioritization Event

The prioritization of the Barry County significant health needs took place one month after the data review. All project partners were encouraged to invite key stakeholders and community partners to the prioritization event, during which the health issues would be prioritized (Appendix C). The meeting was advertised on the Barry-Eaton District Health Department website and Facebook page, via email to the project email listserv, at local coalition meetings, and via project partner websites, Facebook pages and other media.

During the event, the health department staff facilitated grounding activities to prepare participants for voting later in the session.

Facilitated grounding activities:

- Review of the Community Health Needs Assessment process
- Refresher of the data presented at the data preview event
- Outline of the new information requested by the audience at the data preview event

After this grounding phase, participants engaged in an orientation to the web-based voting process, including a mock voting session. Once participants were comfortable with the voting process, they evaluated all 16 health issues in four voting cycles (one for each prioritization criteria). The results were put into the prioritization matrix worksheet, and weighted scores were calculated (Table 17). The five health issues with the lowest score were the community prioritized significant health needs. In Figure 86, the Barry County significant health needs with the highest weighted score were:

- Mental health needs and access
- Affordable housing
- Health care access and quality
- Substance use disorder
- Social connection and capital

Table 16: Individual Indicators by Priority Category

Priority Category	Description	Assessment Measures
Financial Stability and Economic Mobility	• Financial stability can include many interrelated economic components, such as poverty and income. • Economic mobility means the ability to improve one's economic situation, which can be reflected by a geography's cost of living, employment opportunities and the ability to earn a living wage.	• Gini Coefficient of Income Inequality • Percentage of Households Below ALICE Threshold • Food Insecurity
Affordable Housing	• Affordable housing may improve health by freeing up resources for nutritious food and health care costs. • Quality housing can reduce exposure to mental health stressors, infectious diseases, allergens, neurotoxins and other dangers. • Families that can only find affordable housing in very high poverty areas may be prone to greater psychological distress and exposure to violent or traumatic events.	• Percentage of Households That Spend More Than 30% of Their Income on Housing

Education	• There is a positive relationship between higher education and improved health outcomes. • Years of formal education correlate strongly with improved work and economic opportunities, reduced psychosocial stress and healthier lifestyles.	• Percentage of Adults Age 25 or Older With a Bachelor's Degree or Higher
Social Connection and Capital	• A growing body of evidence suggests that non-parent adults have a large positive or negative influence on adolescent development. • Adolescents whose social network includes a non-parent adult mentor involved in illegal activity have an increased probability of becoming involved in illegal activity. • Non-parent adults who are positive and supportive can contribute to an adolescent's self-esteem, problem-solving behavior and overall resilience.	• Percentage of Adolescents Who Know Adults in the Neighborhood They Could Talk to About Something Important
Community Safety	• High levels of violent crime compromise physical safety and psychological well-being. • Crime rates can also deter residents from pursuing healthy behaviors, such as outdoor exercise. • Increased stress levels, which might arise from continuous exposure to violence or concerns about personal safety, may contribute to obesity. • Considerations also may include transportation, equality and accessibility of resources.	• Transportation Accidents
Health Care Access and Quality	• Health care access and quality reflect one's ability to obtain health care, get affordable health care services, and receive appropriate and high-quality health care services. • Health insurance coverage helps patients gain entry into the health care system. • Access to primary and preventive health care services can prevent future hospitalization and poor health outcomes. Access to specialty care providers is also critical for patients within a community.	• Percentage of Adults With No Primary Care Provider • Dental Care Access • Breast Cancer Screening • Colon Cancer Screening
Environmental Quality	• An ideal environment has clean air, water and food and is free from toxic exposures. A contaminated environment may contribute to poor health outcomes. • Human environments generally consist of two components: indoor and outdoor. Indoor environmental issues can include lead, mold, exposure to allergens, and infectious agents from insects or rodents. Outdoor environmental hazards can include poor air quality due to smoke, smog, pollution, extreme temperatures and contaminated water sources.	• Rate of Elevated Blood Lead Levels Among Children 6 Years and Younger • Air Pollution – Particulate Matter (PM2.5)
Built Environment	• An adequately built environment enhances the development and well-being of its residents and supports healthy behaviors and outcomes. • The built environment can include the design of a community (such as streets, buildings, sidewalks, parks, etc.) and the assets located within the community (grocery stores, green spaces, locations for physical activity, schools, etc.).	• Housing Quality • Internet Subscriptions (Broadband)

Obesity	• Obesity is often the result of an overall energy imbalance due to poor diet and limited physical activity. • Obesity increases the risk for health conditions such as coronary heart disease, type 2 diabetes, cancer, hypertension, dyslipidemia, stroke, liver and gallbladder disease, sleep apnea and respiratory problems, and osteoarthritis. • Obese individuals may face social and psychological problems, such as stigmatization and low self-esteem.	• Percentage of Adults Who Are Obese • Percentage of Adolescents Who Are Obese
Nicotine Use	• Tobacco use can include cigarettes, electronic cigarettes, chewing tobacco and other nicotine-containing products. • Cigarette smoking is a cause of multiple diseases, including various cancers, cardiovascular conditions, low birthweight and other adverse health outcomes.	• Percentage of Adults Who Smoke • Percentage of Adolescents Who Smoked Cigarettes During the Past 30 Days • Percentage of Adults Who Use Vaping Products
Behavioral Health Need and Access	• Behavioral health is an emerging term within the mental health and substance abuse fields that focuses on a person's mental well-being, ability to function in everyday life and concept of self. • This area focuses on access to behavioral health resources.	• Percentage of Adults With Poor Mental Health • Population to Mental Health Provider Ratio
Substance Use	• Components include aspects of mental health, including stress, depression, psychological disorders, access to mental health services, and those relating to substance misuse, including inappropriate use of alcohol, prescription drugs and illegal drugs. • This area focuses specifically on substance use.	• Percentage of Adults Who Binge Drank During the Past 30 Days • Percentage of Adolescents Who Binge Drank During the Past 30 Days • Percentage of Adolescents Who Have Used Marijuana in the Past 30 Days • Percentage of Adolescents Who Have Used Marijuana Prior to Age 13
Communicable Diseases	• Communicable diseases are diseases that are transmitted between people. These include a variety of respiratory, gastrointestinal, sexually transmitted, bloodborne and vector-borne infections. • Prevention and treatment of communicable diseases are critical to the health of both individuals and communities. Prevention can take many forms, including vaccination, hand washing, social distancing, use of insect repellants and use of condoms during sex, to name a few.	• Percentage of Non-Medical Immunization Waivers Granted
Maternal and Child Health	• Maternal health concerns are traditionally thought of as pregnancy and childbirth. Increasingly, this field is expanding to consider pre- and postpartum depression, obesity and substance misuse issues. • Child health can relate to many topics, such as infant mortality, immunization, proper development and growth, and common childhood diseases such as asthma and obesity.	• Rate of Preventable Asthma Hospitalization Among Youths Under 18 • Rate of Infant Mortality
Chronic Disease	• Chronic diseases generally last one year or longer and usually cannot be prevented by vaccines or cured by medication. • Examples of chronic diseases include cardiovascular disease, diabetes, asthma and arthritis. • Chronic diseases have the most significant impact on the health care system, both in terms of use and financial burden. Some chronic diseases can lead to other diseases and cause financial and psychological distress for patients.	• Rate of Preventable Diabetes Hospitalization • Rate of Preventable Congestive Heart Failure Hospitalization Among Adults 65 and Older • Rate of Preventable COPD Admissions • Preventable Hospital Stays • Disability Rate • Adult Asthma Prevalence • High Cholesterol

		• High Blood Pressure • Diabetes Management Education
Mortality	• Several factors can drive mortality rate, suicide rate and premature death rate. • An indicator that stands out would provide an opportunity to identify and address a community need.	• Mortality Rate • Premature Death Rate • Suicide Rate

Table 17: List of Prioritization Criteria and Weights

Criteria	Weight
Seriousness (*How Serious Is the Health Issue?*)	4
Control (*How Much Control Do We Have To Affect the Health Issue?*)	2
Capacity (*What Is Our Ability, as a Community, To Act on a Particular Health Issue?*)	3
Catalytic (*How Much Does This Issue Affect Other Health Issues?*)	1

Figure 103: Completed Prioritization Matrix From 2021 Barry County Prioritization Event

	Seriousness (how serious is the health issue?)	**Control** (how much can the community affect the health issue?)	**Capacity** (what community resources do we have to act on a particular health issue?)	**Catalytic** (how much does this issue affect other health issues?)	**Weighted Score**
	weight= 1	**weight= 2**	**weight= 3**	**weight= 4**	
***Mental Health Needs and Access**	1	4	6	4	15
***Affordable Housing**	2	8	3	12	25
***Health Care Access and Quality**	5	2	9	16	32
***Substance Misuse**	3	14	12	28	57
***Social Connection and Capital**	8	12	15	32	67
Financial Stability and Economic Mobility	4	28	30	8	70
Obesity	6	24	24	24	78
Education	12	20	18	36	86
Communicable Diseases	14	10	27	44	95
Chronic Disease	9	26	42	20	97
Maternal and Child Health	10	22	33	40	105
Nicotine Use	7	18	21	60	106
Built Environment and Transportation	13	16	36	48	113
Environmental Quality	15	6	39	56	116
Mortality	11	30	45	52	138

*Denotes a priority chosen by the community

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Appendix A: Secondary Data Collection Descriptions

American Community Survey, United States Census Bureau

The U.S. Census Bureau's American Community Survey, formerly the decennial's 'long form', is a nationwide population-based survey that collects and produces information on social, economic, housing, and demographic characteristics about our nation's population every year.[98]

Area Health Resource File/American Medical Association

The Area Health Resources Files are released annually by the Health Resources & Services Administration's Bureau of Health Workforce. The Area Health Resource File includes data on health care professions, health facilities, population characteristics, economics, health professions training, hospital utilization, hospital expenditures, and environment for various geographies in the United States.[99]

Behavioral Risk Factor Survey, Capital Area

The Capital Area Behavioral Risk Factor Survey (BRFS) is a random digit-dialed landline and mobile telephone health survey of adults administered by the Capital Area United Way on behalf of Barry-Eaton District Health Department, Ingham County Health Department, and Mid-Michigan District Health Department. This survey project collects information on health behaviors, preventive health practices, health care access, social cohesion, and interactions from six counties.[100] It is modeled after Michigan's (BRFS) and the national Behavioral Risk Factor Surveillance System.

Behavioral Risk Factor Surveillance System, Michigan

The Michigan Behavioral Risk Factor Surveillance System (BRFSS) comprises annual, state-level landline and mobile telephone surveys of Michigan residents aged 18 years and older. These annual, state-level surveys, also known as Michigan Behavioral Risk Factor Surveys, act as the only source of state-specific, population-based estimates of the prevalence of various behaviors, medical conditions, and preventive health care practices among Michigan adults.

The BRFSS is supported by the Centers for Disease Control and Prevention through a cooperative agreement with the Michigan Department of Health and Human Services. The Michigan surveys follow the Centers for Disease Control and Prevention's telephone survey protocol for the BRFSS annual standardized core questionnaire.[101]

Centers for Medicare & Medicaid Services Office of Minority Health's Mapping Medicare Disparities

The Centers for Medicare & Medicaid Services Office of Minority Health has designed the Mapping Medicare Disparities Tool, an interactive map first launched in 2016, to identify areas of disparities between subgroups of Medicare beneficiaries (e.g., racial and ethnic groups) in health outcomes, utilization, and spending. Focused initially on chronic condition prevalence, the tool currently contains additional measures across multiple health domains, including costs, service utilization, quality of care, and health outcomes.[102]

Comprehensive Housing Affordability Strategy United States Department of Housing and Urban Development / U.S. Census Bureau

The Comprehensive Housing Affordability Strategy consists of "custom tabulations" of U.S. Census Bureau data that are generally not publicly available. This data is used to determine the number of households needing housing assistance.[103]

National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

In collaboration with national, state, and local partners, the Environmental Public Health Tracking Network uses data and expertise to identify and address environmental public health needs, particularly air quality, and improve public health capacity across the United States.[104]

Fatality Analysis Reporting System, National Center for Statistics and Analysis, National Highway Traffic Safety Administration

The Fatality Analysis Reporting System, which became operational in 1975, contains data on a census of fatal traffic crashes for every state, the District of Columbia, and Puerto Rico. To be included in the Fatality Analysis Reporting System, a crash must involve a motor vehicle traveling on a traffic way customarily open to the public and must result in the death of an occupant of a vehicle or a non-occupant within 30 days (720 hours) of the crash.[105]

Food Environment Atlas, Economic Research Service / United States Department of Agriculture

There is a complex interaction between the local food environment (i.e., store/restaurant proximity, food prices, food and nutrition assistance programs, and community characteristics) and individual food choices. These factors must be observed with each other to understand these complex interactions. The United States Department of Agriculture's Food Environment Atlas was designed as a tool to facilitate that understanding.[106]

Local Area Unemployment Statistics, Michigan Department of Technology, Management & Budget

The Local Area Unemployment Statistics program, housed in the Michigan Department of Technology, Management & Budget (DTMB), provides a monthly estimate of the state's labor force, employment, unemployment, and unemployment rate. Data is taken from surveys and unemployment claims recorded during the monthly reference week, usually the week including the 12th day of each month. Statistics are an estimate of persons by place of residence.[107]

Map the Meal Gap, Feeding America

Map the Meal Gap is an annual study of food cost and food insecurity conducted by Feeding America. Feeding America is a nationwide network of food banks and the nation's largest domestic hunger-relief organization. Information collected by Map the Meal Gap includes food insecurity rates and numbers, food budget shortfall, cost-of-food index, and national average meal cost. The study uses the Current Population Survey information, a population-based survey of the country's labor force project, supported jointly by the United States Census Bureau and the United States Bureau of Labor Statistics.[108]

Michigan Disease Surveillance System, Michigan Department of Health and Human Services

Michigan Disease Surveillance System is a public health surveillance system administered by the Michigan Department of Health and Human Services that monitor individual cases of reportable conditions for the state.[109]

Michigan Center for Educational Performance and Information

The Michigan Center for Educational Performance and Information is a clearinghouse of information collected from schools and colleges in the state. It coordinates, collects, connects, and reports education data in Michigan. The data is then used to help inform parents, educators, and policymakers' policies, programs, and other decisions to improve state and local educational outcomes.[110]

Michigan Incident Crime Reporting, Michigan State Police

Information about 95 specific criminal offenses (ranging from arson to homicide to weapon offenses) is collected by Michigan State Police from all law enforcement agencies. This information is used to populate the Michigan State Police's incident-based reporting system: Michigan Incident Crime Reporting. Some of the information captured in Michigan Incident Crime Reporting include administrative, offense, victim, property, offender, and arrestee information for each incident known to police. The Michigan State Police also forwards this information to the Federal Bureau of Investigation's National Incident-Based Reporting System.[111]

Michigan Health & Hospital Association Data

Michigan Health & Hospital Association is the advocacy organization representing all community hospitals in the state. It owns and administers a proprietary database of hospitalizations of Michigan residents, all short-stay hospitals (including Veterans Administration hospitals but excluding military hospitals) in Michigan and surrounding states. MHA shares a portion of the information it collects with the Michigan Department of Health and Human Services.[112]

National Vital Statistics System – Mortality Files, National Center for Health Statistics

Data on deaths and births were provided by National Center for Health Statistics and drawn from the National Vital Statistics System. These data are submitted to the NVSS by the vital registration systems operated in the jurisdictions legally responsible for registering vital events (i.e., births, deaths, marriages, divorces, and fetal deaths). In prior years of the Rankings, Premature Death was calculated by the National Center for Health Statistics. However, this year, the Mortality-All County (micro-data) file was requested, allowing Premature Death and Life Expectancy to be calculated.[113]

National Provider Identifier Registry/National Plan and Provider Enumeration System, Centers for Medicare and Medicaid

The National Plan and Provider Enumeration System, developed by the Centers for Medicare and Medicaid, documents the National Provider Identifier. The National Provider Identifier is a unique intelligence-free identification number for covered health care providers. Covered health care providers and all health plans and health care clearinghouses must use the National Provider Identifier in the administrative and financial transactions adopted under Health Insurance Portability and Accountability Act. The National Provider Identifier Registry is a query-only database updated daily to enable users to query the NPPES (e.g., search by National Provider Identifier, provider name, etc.) and retrieve the Freedom of Information Act-disclosable data from the search results.[114]

Safe Drinking Water Information System, Environmental Protection Agency

The Safe Drinking Water Act requires states to report drinking water information periodically to the United States Environmental Protection Agency. Some of the information states include in their report are basic information about each public water system, characteristics of the system's source(s) of water, violation information for each public water system, and enforcement information (including actions states or the Environmental Protection Agency have taken to ensure that a public water system returns to compliance if it is in violation).[115]

Uniform Crime Reporting – Federal Bureau of Investigation

Uniform Crime Reporting Program generates reliable statistics for use in law enforcement. It also provides information for students of criminal justice, researchers, the media, and the public. The program has been providing crime statistics since 1930. The Uniform Crime Reporting Program includes data from more than 18,000 cities, universities and colleges, and county, state, tribal, and federal law enforcement agencies. Agencies voluntarily participate and submit their crime data either through a state Uniform Crime Reporting program or directly to the Federal Bureau of Investigation's Uniform Crime Reporting Program.[116]

Vital Records & Health Statistics, Michigan Department of Health & Human Services

While the primary purpose for collecting vital records is to record information on vital events (i.e., births, deaths, marriages, and divorces) for legal purposes, these records also serve as an essential source for statistical information. The Michigan Department of Health & Human Services' Division for Vital Records & Health Statistics calculates Michigan's counts, rates, and percentages for various demographic groups and geographies.[9]

Appendix B: Healthcare Resource Availability

Table B1: ***Number of Healthcare Facilities in Barry County and Michigan***

Indicator	Year	Measure	Barry County	Michigan
Non-Hospital Facilities				
Community Health Centers	2020	Total Number	1	385
Community Mental Health Centers	2020	Total Number	0	2
Federally Qualified Health Centers	2020	Total Number	0	267
Home Health Agencies	2020	Total Number	0	464
Hospices	2020	Total Number	0	141
Rural Health Clinics	2020	Total Number	3	192
Skilled Nursing Facilities	2020	Total Number	2	432
Hospital Facilities				
Hospitals	2020	Total Number	1	165
Community Hospitals	2020	Total Number	1	126
Critical Access Hospitals	2020	Total Number	1	36
General Hospitals	2020	Total Number	1	127
Non-General Hospitals	2020	Total Number	0	34
Acute Long-Term Care Hospitals	2020	Total Number	0	0
Psychiatric Hospitals	2020	Total Number	0	13
Rehabilitation Hospitals	2020	Total Number	0	2
Veterans Administration (VA) Hospitals	2020	Total Number	0	5

Table B2: ***Number of Healthcare Professionals in Barry County and Michigan***

Indicator	Year	Measure	Barry County	Michigan
	Short-Term Hospitals / General Hospitals			
Registered Nurses	2019	Total Number	63	45,187
Advanced Practice Nurses	2019	Total Number	34	11,503
Licensed Practical Nurses/ Licensed Vocational Nurses	2019	Total Number	6	1,245
Nursing Assistive Persons	2019	Total Number	24	11,601
Laboratory Technicians	2019	Total Number	20	3,734
Pharmacists	2019	Total Number	2	1,901
Pharmacy Technicians	2019	Total Number	5	1,994
Radiology Technicians	2019	Total Number	17	5,297
Respiratory Therapist	2019	Total Number	4	2,457
	Short-Term Non-General / Long-Term Hospital Facilities			
Registered Nurses	2019	Total Number	0	2,873
Licensed Practical Nurses/ Licensed Vocational Nurses	2019	Total Number	0	341
Nursing Assistive Persons	2019	Total Number	0	1,640
Laboratory Technicians	2019	Total Number	0	82
Pharmacists	2019	Total Number	0	152
Pharmacy Technicians	2019	Total Number	0	114
Radiology Technicians	2019	Total Number	0	119
Respiratory Therapist	2019	Total Number	0	201

Table B3: ***Number of Medical and Nursing Specialties in Barry County and Michigan***

Indicator	Year	Measure	Barry County	Michigan
		Medical Specialties		
		MD | Medical Doctors (Allopathic Medicine)		
Allergy & Immunology	2019	Total Number, Non-Federal	0	147
Anesthesiology	2019	Total Number, Non-Federal	1	1,171
Cardiovascular Disease Specialty	2019	Total Number, Non-Federal	0	620
Child Psychology	2019	Total Number, Non-Federal	0	209
Colorectal Surgery	2019	Total Number, Non-Federal	0	77
Dermatology	2019	Total Number, Non-Federal	0	338
Diagnostic Radiology	2019	Total Number, Non-Federal	0	782
Emergency Medicine	2019	Total Number, Non-Federal	1	1,603
General Family Medicine	2019	Total Number, Non-Federal	12	2,920
Forensic Pathology	2019	Total Number, Non-Federal	0	18
Gastroenterology	2019	Total Number, Non-Federal	0	378
General Practice	2019	Total Number, Non-Federal	13	102
Preventive Medicine	2019	Total Number, Non-Federal	0	35
General Surgery	2019	Total Number, Non-Federal	4	1,255
General Internal Medicine	2019	Total Number, Non-Federal	3	3,737
Neurological Surgery	2019	Total Number, Non-Federal	1	187
Neurology	2019	Total Number, Non-Federal	0	566
Obstetrics / Gynecology	2019	Total Number, Non-Federal	2	1,245
Occupational Medicine	2019	Total Number, Non-Federal	0	56
Otolaryngology	2019	Total Number, Non-Federal	0	263
Pathology	2019	Total Number, Non-Federal	0	524
General Pediatrics	2019	Total Number, Non-Federal	3	1,543
Pediatric Cardiology	2019	Total Number, Non-Federal	0	123
Physical / Medical Rehabilitation	2019	Total Number, Non-Federal	0	448

Plastic Surgery	2019	Total Number, Non-Federal	0	229
Psychiatry	2019	Total Number, Non-Federal	0	948
Pulmonary Disease Specialist	2019	Total Number, Non-Federal	0	399
Radiation Oncology	2019	Total Number, Non-Federal	0	193
Radiology	2019	Total Number, Non-Federal	0	383
Thoracic Surgery	2019	Total Number, Non-Federal	0	133
Urology	2019	Total Number, Non-Federal	0	313
DO | Doctor of Osteopathic Medicine				
Anesthesiology	2019	Total Number, Non-Federal	0	227
Emergency Medicine	2019	Total Number, Non-Federal	3	567
General Family Medicine	2019	Total Number, Non-Federal	3	1,070
General Practice	2019	Total Number, Non-Federal	0	176
General Surgery	2019	Total Number, Non-Federal	0	150
General Internal Medicine	2019	Total Number, Non-Federal	2	408
Obstetrics/Gynecology	2019	Total Number, Non-Federal	2	212
Orthopedic Surgery	2019	Total Number, Non-Federal	1	183
General Pediatrics	2019	Total Number, Non-Federal	0	156
Physical/Medical Rehabilitation	2019	Total Number, Non-Federal	2	94
Psychiatry	2019	Total Number, Non-Federal	0	108
Nursing Specialties				
Nurse Practitioners (NPI)	2020	Total Number	29	8,433
Advanced Practice Nurse Midwives (NPI)	2020	Total Number	3	301
Advanced Practice Registered Nurses (NPI)	2020	Total Number	34	11,503
Certified Registered Nurse Anesthetists (NPI)	2020	Total Number	2	2,658
Certified Nurse Midwives (NPI)	2013	Total Number	5	321
Clinical Nurse Specialist (NPI)	2020	Total Number	0	111

Note: NPI - National Provider Identifier Number

Appendix C: Prioritization Participants

Table C1: Prioritization Event Participants

Name of Attendee	**Affiliation**
Jillian Foster	Barry Community Foundation
Tammy Pennington	Barry County Commission on Aging
Emily Whisner	Barry County Community Mental Health Authority
Kristyn Kostelec	Barry County Community Mental Health Authority
Liz Lenz	Barry County Community Mental Health Authority
Rich Thiemkey	Barry County Community Mental Health Authority
Sheryl Overmire	Barry County Trial Court
Lani Forbes	Barry County United Way
Pattrick Jansens	Barry County United Way
Anne Barna	Barry-Eaton District Health Department
Emily Smale	Barry-Eaton District Health Department
Robert Schirmer	Barry-Eaton District Health Department
Julie McMillen	Calhoun Intermediate School District
Ashleigh Wassenaar	Michigan Department of Health and Human Services
Lorena Frederick	Michigan Department of Health and Human Services
Sarah Graham	Michigan Department of Health and Human Services
Laura Anderson	Michigan State University
Leslie Visser	Pine Rest Christian Mental Health Services
Angie Ditmar	Spectrum Health
Bernard Jore	Spectrum Health
Beth Jabin	Spectrum Health
Cassie Larrieux	Spectrum Health
Emily Welker	Spectrum Health
Janine Dalman	Spectrum Health
Rhonda Lundquist	Spectrum Health

Appendix D: Barry County Community Survey

1. Do you live or work in Barry County?
   - ☐ Yes
   - ☐ No *(End of survey. Thank you for participating.)*

2. What is your age in years?
   - ☐ Under 18 years old *(End of survey. Thank you for participating.)*
   - ☐ 18-21 years old
   - ☐ 21-30 years old
   - ☐ 31-40 years old
   - ☐ 41-50 years old
   - ☐ 51-60 years old
   - ☐ 61-70 years
   - ☐ 71 and older
3. What is the highest level of education you have completed?
   - ☐ Never attended school or only attended Kindergarten
   - ☐ Grades 1 through 8 (Elementary School)
   - ☐ Grades 9 through 11 (Some High School)
   - ☐ Grade 12 or GED (High School Graduate)
   - ☐ College 1 to 3 years (Some college or technical school)
   - ☐ College 4 or more years (College Graduate)

4. Are you currently…? Mark only one.
   - ☐ Employed for wages
   - ☐ Self-employed
   - ☐ Out of work for more than 1 year
   - ☐ Out of work for less than 1 year
   - ☐ A Homemaker
   - ☐ A Student
   - ☐ Retired
   - ☐ Unable to work

5. Is the community you live
   - ☐ Urban
   - ☐ Suburban
   - ☐ Rural

6. How would you identify your gender?
   - ☐ Female
   - ☐ Male
   - ☐ Other: _____

7. Do you have any kind of health care coverage, including health insurance, or prepaid plans (such as HMOs, or government plans such as Medicare, Medicaid, or a County Health Plan)? Mark only one.
    - Yes
    - No

8. What type of health care coverage do you use to pay for **most** of your medical care? Mark only one.
    - A plan through an employer or union (includes plans purchased through another person's employer)
    - A plan you, or someone else, buys for you
    - Medicare
    - Medicaid
    - Healthy Michigan Plan (expanded Medicaid)
    - Military (CHAMPUS, TRICARE or VA)
    - Indian Health Service or Alaska Native Health Service
    - Other: _____
    - None (you pay the provider or hospital directly for full cost of care)

9. Do you rent or own your home?
    - Rent
    - Own, paying mortgage
    - Own, no mortgage
    - Living with friend or family and <u>not</u> paying rent
    - Homeless

10. Pick the TOP three factors you think define a healthy community? Choose only THREE.
    - Access to healthcare
    - Access to healthy and nutritious food
    - Affordable healthcare (including dental, vision, and hearing)
    - Affordable housing
    - Arts and cultural events
    - Clean environment
    - Community involvement
    - Disease/illness prevention
    - Financially healthy households
    - Good jobs and healthy economy
    - Good schools
    - Healthy lifestyles
    - Access to immunizations
    - Low crime/safe neighborhoods
    - Low disease rate and death rate
    - Low levels of child abuse
    - Access to Parks and recreation
    - Religious or spiritual values
    - Strong family life
    - Tolerance for diversity
    - Other: _____

11. Pick the TOP three problems you think are impacting the health of Barry County? Choose only THREE.
    - ☐ Aging problems
    - ☐ Alcohol and other drug issues
    - ☐ Child abuse and neglect
    - ☐ Chronic disease
    - ☐ Climate change related impacts (more severe weather, increase in water and insect borne disease)
    - ☐ Domestic violence
    - ☐ Homelessness
    - ☐ Homicides
    - ☐ Housing risks and hazards
    - ☐ Infectious disease
    - ☐ Lack of access to healthcare (including dental, vision and hearing)
    - ☐ Lack of physical activity
    - ☐ Mental health problems
    - ☐ Motor vehicle crashes
    - ☐ Obesity
    - ☐ Poor access to healthy and nutritious food (i.e. too expensive or store is too far away)
    - ☐ Poor dietary habits
    - ☐ Rape / sexual assault
    - ☐ Sexually transmitted infections
    - ☐ Suicide
    - ☐ Teen pregnancy
    - ☐ Tobacco use
    - ☐ Other: _____

12. Pick the TOP three concerns impacting your household/family because of the COVID-19 pandemic? Choose only THREE.
    - ☐ Concerns about short/long term health effects from COVID-19
    - ☐ Decreased access to healthcare
    - ☐ Delaying necessary care due to COVID-19 concerns
    - ☐ Feelings of loss from COVID-19 death(s)
    - ☐ Financial difficulties
    - ☐ Food insecurity
    - ☐ Increase in stress, depression & anxiety
    - ☐ Increased fear or distrust of the health care system
    - ☐ Increased substance use
    - ☐ Increased domestic violence
    - ☐ Limited access to COVID-19 vaccinations
    - ☐ Lack of physical activity (due to various closures)
    - ☐ Withdrawal from supports and services
    - ☐ None

13. Have you been partially or fully vaccinated, scheduled to be vaccinated, or planning to be vaccinated for COVID-19?
    - □ Yes (Go to Question 16)
    - □ No (Go to Question 14)

14. What is the main reason why you would not get a vaccine for coronavirus?
    - □ I had COVID-19 and should be immune
    - □ The vaccine could give me COVID-19
    - □ COVID-19 is not a serious illness
    - □ I am not a member of any group that is at high risk for COVID-19
    - □ I plan to use masks/other precautions instead
    - □ I plan to wait and see if it is safe and may get it later
    - □ I am concerned that the vaccine is being developed too quickly
    - □ I am concerned about the side effects and safety of the vaccine
    - □ I don't like vaccines
    - □ I am concerned about the costs associated with the vaccine (such as office visit costs or vaccine administration fees)
    - □ I don't like what is in the vaccine
    - □ Other: _____

15. Have reports you heard/read in the media/on social media influenced your decision to be vaccinated?
    - □ Yes
    - □ No

16. How confident are you...

	Not at All Confident	Not Very Confident	Somewhat Confident	Very Confident	Extremely Confident
...getting healthcare on your own? *(for example, scheduling and attending appointments, finding a provider, filling a prescription, and knowing where to go for services)*	□	□	□	□	□
...dealing with your health insurance provider on your own? (*for example, understanding your coverage, understanding the statements they send to you, or disputing a claim)*	□	□	□	□	□
…getting reliable health-related advice or information about your condition?	□	□	□	□	□
...using virtual healthcare services? (*for example, scheduling and attending appointments, sending, and receiving messages from your provider, or navigating apps/patient portals)*	□	□	□	□	□
...filling out medical forms by yourself? *(for example, insurance forms, questionnaires, and doctor's office forms)*	□	□	□	□	□

17. How often do you need to have someone help you when you read instructions, pamphlets, or other written material from your provider or pharmacy?
    - □ Always
    - □ Often
    - □ Sometimes
    - □ Rarely
    - □ Never

18. In the past 12 months, were you offered the opportunity of a virtual office visit with a health service provider?
    - □ Yes (go to question 19)
    - □ No (go to question 21)

19. On a scale from 1 (very easy) to 5 (very difficult) rate how easy it was to…

	1	2	3	4	5	NA
…use the website (i.e. Zoom/patient portal/app.	□	□	□	□	□	□

20. On a scale from 1 (very easy) to 5 (very difficult) rate how easy it was to…

	1	2	3	4	5	NA
…send or receive messages from your provider.	□	□	□	□	□	□

21. Why didn't you choose to have a virtual office visit?

- □ I do not have a computer
- □ My computer or smartphone is too old
- □ I do not have a smartphone
- □ My provider does not offer virtual visits
- □ I could not download the software/app
- □ I do not have internet access at home
- □ my internet is too slow
- □ I don't like computers
- □ I could not understand the directions to the software/patient portal/app
- □ I had trouble logging into the software because of my password
- □ Other:

22. What is your race? Do you consider yourself o be…

- □ White
- □ Black or African American
- □ Asian
- □ Native Hawaiian or Pacific Islander
- □ American Indian or Alaskan Native
- □ More than One Race
- □ Other: _____

23. Are you Hispanic, Latino/a, or of Spanish origin?

- □ Yes
- □ No

24. What is your annual household income (from all sources)? Mark only one.

- □ $14,999 or less
- □ Between $15,000-$24,999
- □ Between $25,000 and $34,999
- □ Between $35,000 and $49,999
- □ Between $50,000 and $74,999
- □ Between $75,000 and $99,999

- □ $100,000 or more

25. What is your sexual orientation? Do you identify as…?
    - □ Heterosexual or Straight
    - □ Homosexual or Lesbian/Gay
    - □ Bisexual
    - □ Other: _____

26. Because of a physical, mental or emotional condition, do you have diffculty doing errands alone such as visiting a doctor's office or shopping?
    - □ Yes
    - □ No
    - □ Don't Know/Not Sure

27. Please indicate your level of agreement with the following statements (check all that apply):

	Strongly disagree	Somewhat Disagree	Neutral	Somewhat agree	Strongly agree
Addressing social needs is as important as addressing medical needs to improve community health	□	□	□	□	□
I can afford to access resources available in my community	□	□	□	□	□
I have the access to the resources I need to stay healthy	□	□	□	□	□
I experience cultural / language barriers that prevent me from accessing quality healthcare	□	□	□	□	□

28. What do you feel are the top THREE barriers to getting healthcare in the community in which you live?
    - □ Ability to schedule appointments
    - □ Cost
    - □ Concerns about COVID-19 exposure
    - □ Difficulty navigating the healthcare system
    - □ Fear or distrust of the health care system
    - □ Finding a practice that accepts my insurance
    - □ Finding a practice that accepts new patients
    - □ Location of healthcare / no transporation
    - □ Not knowing where to find resources to pay for care
    - □ Prescription / Medication cost
    - □ No Barriers
    - □ Other: _____

29. Where do you get information about the health resources available in Barry County? Check all the apply.
    - ☐ Church
    - ☐ Community Service Organizations
    - ☐ Community / Senior Center
    - ☐ E-newsletters
    - ☐ Family and friends
    - ☐ Health professionals (doctor, nurse, pharmacist, etc.)
    - ☐ I don't know where to look
    - ☐ Internet
    - ☐ Library
    - ☐ Newspaper and magazines
    - ☐ Radio
    - ☐ School
    - ☐ Social media
    - ☐ TV
    - ☐ None of the above

Appendix E: Barry County Healthcare Provider Survey

1. In which county(ies) do you practice? (check all that apply)
   - ☐ Barry
   - ☐ Eaton
   - ☐ Kent
   - ☐ Allegan
   - ☐ Calhoun
   - ☐ Ionia
   - ☐ Kalamazoo

   ☐ Other: _____

2. What level of provider are you? *(check only one)*
   - ☐ Nurse Practitioner
   - ☐ Physician's Assistant
   - ☐ Physician

3. What hospitals are you affiliated with?
   (check all that apply)
   - ☐ Spectrum Health Pennock
   - ☐ Spectrum Health Blodgett
   - ☐ Spectrum Health Butterworth
   - ☐ Bronson Battle Creek Hospital
   - ☐ Ascension Borgess Hosptial
   - ☐ Bronson Methodist Hospital
   - ☐ Mercy Health St. Mary's
   - ☐ Metro Health Hospital
   - ☐ Other: _____

4. What is your gender?

   - ☐ Female
   - ☐ Male
   - ☐ Prefer not to say
   - ☐ Other: _____

5. What is your race? Do you consider yourself…

   - ☐ White
   - ☐ Black or African American
   - ☐ Asian
   - ☐ American Indian or Alaskan Native
   - ☐ Native Hawaiian or Pacific Islander
   - ☐ Other: _____

6. What is your ethnicity?

- ☐ Hispanic/Latino(a) or Spanish Origin
- ☐ Arab or Middle Eastern
- ☐ Neither

7. Do you identify as:

- ☐ Heterosexual
- ☐ Lesbian, Gay, or Homosexual
- ☐ Bisexual
- ☐ Other: _____

8. What is your age in years?

- ☐ Less than 21 years
- ☐ 21-30 years
- ☐ 31-40 years
- ☐ 41-50 years
- ☐ 51-60 years
- ☐ 61-70 years
- ☐ 71 and older

9. Do you live in Barry County?

- ☐ Yes
- ☐ No

10. What do you think are the THREE most significant factors that define a "healthy community"?

- ☐ Access to healthcare (physical health)
- ☐ Access to behavioral healthcare (mental health)
- ☐ Access to healthy and nutritious food
- ☐ Affordable healthcare (including dental, vision, and hearing)
- ☐ Affordable housing
- ☐ Arts and cultural events
- ☐ Clean environment
- ☐ Community involvement
- ☐ Disease/illness prevention
- ☐ Financially healthy households
- ☐ Good jobs and healthy economy
- ☐ Good schools
- ☐ Healthy lifestyles
- ☐ High rate of Immunizations / Vaccine use
- ☐ Low crime/safe neighborhoods
- ☐ Low disease rate and death rate
- ☐ Low levels of child abuse
- ☐ Parks and recreation
- ☐ Religious or spiritual values
- ☐ Strong family life
- ☐ Tolerance for Diversity
- ☐ Other: _____

11. What do you believe are the top THREE factors that negatively impact your patients' health?

- ☐ Barriers to physical activity
- ☐ Communication barriers
- ☐ Crime rate in your patients' local community
- ☐ Delay in seeking preventative care due to COVID-19
- ☐ High cost of nutritional food in your patients' community
- ☐ Lack of available nutritional food in your patients' community
- ☐ Lack of primary care physicians in the local community
- ☐ Lack of senior services in the local community
- ☐ Lack of transportation
- ☐ Medications are not affordable
- ☐ Patients' lack of access to adequate childcare
- ☐ Patients' lack of access to adequate health insurance
- ☐ Patients' lack of education about making health-conscious decisions
- ☐ Patients' lack of motivation to make health-conscious decisions
- ☐ Patients' living conditions
- ☐ Patients' low household income
- ☐ Poor environmental conditions (e.g. air and water pollution)

12. To what, if any, community resources do you routinely refer patients to help address unmet needs (please check all that apply)

- ☐ Community Health Clinics (ex: FQHCs, Health Centers)
- ☐ Community Health Workers (CHWs)
- ☐ Community mental health services
- ☐ Community organizations such as Salvation Army or United Way
- ☐ MI Department of Health and Human Services (MDHHS)
- ☐ Domestic Abuse Services and Resources
- ☐ Food bank/pantry
- ☐ Home care and/or hospice services
- ☐ I do not refer patients to community services
- ☐ Intermediate school district services
- ☐ Neighborhood centers
- ☐ Police departments
- ☐ Public health services
- ☐ Religious Organizations
- ☐ Resident Clinc
- ☐ Substance abuse treatment services
- ☐ Senior services
- ☐ Women’s resource cent

13. Please indicate your level of agreement with the follow statements:

	Strongly disagree	*Somewhat disagree*	*Neutral*	*Somewhat agree*	*Strongly agree*
Addressing patients' social needs is as important as addressing their medical conditions	☐	☐	☐	☐	☐
Besides my own staff and colleagues, I feel I have little to no support in helping my patients and their families lead healthier lives	☐	☐	☐	☐	☐
My patients have access to the resources they need to stay healthy	☐	☐	☐	☐	☐
My patients frequently express health concerns caused by unmet social needs that are beyond my control as a physician	☐	☐	☐	☐	☐
My patients' unmet social needs often prevent me from providing quality care	☐	☐	☐	☐	☐
Cultural / language barriers to patient-provider communication often get in the way of quality service provision	☐	☐	☐	☐	☐

14. What do you think are the THREE most important health-related concerns associated with the COVID-19 pandemic? (Check all that apply)

- ☐ Concerns about short/long term health effects from COVID-19
- ☐ Decreased access to healthcare
- ☐ Delaying necessary care due to COVID-19 concerns
- ☐ Feelings of loss from COVID-19 death(s)
- ☐ Financial Difficulties
- ☐ Food Insecurity
- ☐ Increase in stress, depression, and anxiety
- ☐ Increased fear or distrust of the health care system
- ☐ Increased substance use
- ☐ Increased domestic violence
- ☐ Limited access to COVID-19 vaccinations
- ☐ Lack of physical activity (due to various closures)
- ☐ Withdrawal from supports and services
- ☐ Vaccine hestiancy
- ☐ Other: _____

15. The COVID-19 pandemic has been an unprecdented time for healthcare providers. Given your experience, what are your suggestions for concrete actions to help our county recovery and address potential long term impacts of the pandemic?

_____
_____
_____
_____
_____
_____

16. During the COVID-19 pandemic, have you felt overwhelmed by your workload or work/family balance?
    - ☐ Yes
    - ☐ No

17. Do you feel like your efforts at work were appreciated during the pandemic?
    - ☐ Yes
    - ☐ No
    - ☐ Not sure

18. Have you experience any of the following traumatic events or stressors during the pandemic? (Check all that apply)
    - ☐ Feeling overwhelmed by your work
    - ☐ Receiving threats because of your work
    - ☐ Feeling bullied, threatened, or harassed because of your line of work

19. Do you feel you were provided adequate resources for help (such as an Employee Assistance Program) during the pandemic?

    - ☐ Yes
    - ☐ No
    - ☐ Not sure

Appendix F: Underserved Population Focus Group/Interview Questions

2021 Interview Discussion Guide

What to expect in the interview?
Interviews are a way for us to collect lived experiences of people in Barry County. Please feel free to answer the questions open and honestly. We ask questions about your experiences with health systems, community support, and health in general.

The interview will be audio recorded because we don't want to miss any of your comments. Your name will not be connected with your comments outside of the recordings. No one besides the project staff and researchers will have access to these recordings. We hope you'll feel free to speak openly and honestly. Your name and address will only be used to mail the gift card.

You will receive a $25 gift card from Walmart for your participation in the mail.

What is the purpose of this interview?
This discussion will help us to find out the health needs and concerns of people in Barry County. Information from these interviews will be combined with other health statistics and information to better describe health needs and concerns of all residents of the three counties. Our goal is to work together as health departments, hospitals, and community organizations to improve health, and asking people directly what they think and have experienced in the community is a key part.

Paperwork - These are completed ahead of time

- Focus group participation agreement form
- Incentive receipt form - $25 Walmart Gift Cards

DISCUSSION TOPICS

1. We have all been living through the largest pandemic in modern history. So much has changed – many things have been harder, even heartbreaking if you have experienced a loss, but there may have been some positive things as well. How has COVID-19 impacted you and your family?
    a. **PROBE**
        i. Was there anything (resources, etc.) that you couldn't access as you could prior to the pandemic?
        ii. Were there any resources you were able to use in a manner that was more beneficial than before the pandemic? (ex. Virtual visits)
        iii. In what ways has it impacted your mental health?
        iv. What helped you get through the COVID-19 pandemic?

2. One of the things that affects people's personal health is having access to health care.
    a. Has there been a time recently when you or someone you know needed care but didn't get it? Why not?
    b. Did having insurance, no insurance, Medicaid at the time make a difference?
    c. Are you able to get the preventive services that you need, like yearly physicals, well-child visits, dental care, mental health, behavioral health, etc.?
    d. Do you take any medications for chronic conditions such as high blood pressure, diabetes, etc.? If so, are they affordable? Has that changed recently?

3. Our relationship with our doctor or other health care professional can be very important to helping us be healthy.
    a. How do you feel about the relationship with your doctor or other health care professional?
    b. Do you feel that your health care professional listens to you? Do they make sure that you understand what they are telling you? Do they allow you to help make decisions regarding your medical care or treatment?
    c. Do you feel your professional spends enough time with you?

4. What has been your experience dealing with your mental health?
    a. What coping strategies or mechanisms have you used?
    b. Have you been able to get mental or behavioral health care when you needed it? Have you had to travel outside of your local community to access the care you are looking for?

5. Many of us have chronic diseases like diabetes, heart disease, hypertension, asthma, or depression – or if we don't someone in our family might.
    a. What's your experience with chronic diseases like these? How do they change your life?
    b. How do you get treatment for your condition? What has been your experience been like trying to get it under control?
    c. Have you had to travel outside of your local community for care?
    d. Thinking back to the time before you or your family member developed the disease – what things, actions, or interventions might have prevented them from getting it in the first place?

6. Why do you think are factors that help some people in the community be healthier than others?
    a. What are the things around where you live that help you to be healthy?
    b. What are the things around where you live that make it harder to be healthy?
    c. PROBE:
        i. Access to healthy foods
        ii. Access to places for physical activity (gyms, parks, trails, etc.)
        iii. Opportunities to experience nature or your natural environment
        iv. Safety / Attractive surroundings
        v. Access to doctor's office – (accommodations, language)
        vi. Exposure to alcohol/tobacco/other illegal substances or unhealthy foods
        vii. Housing
        viii. Work that you do

7. We are interested in making our community a healthier place for everyone to live now, and after the pandemic ends.

a. What concrete things could we do to make that happen?
b. If anything were possible, what would help your family be healthier?

8. Is there anything else you'd like to add, or anything else we should know?

Closing

Thank you for participating in this interview. We appreciate you taking the time to share your experience with us. You will be receiving a $25 gift card to Walmart in the mail shortly.

Appendix G: Barry County Leadership/Key Stakeholders Focus Group/Interview Questions

Set up and other considerations
We would like to thank you for participating in tonight's discussion on health in our community. In order to help avoid potential distractions we would appreciate it if you would turn your cell phones off or place them on vibrate. We want everyone to have the chance to explain their personal experiences, so we would appreciate it if you would allow those speaking to finish before sharing your own comments.

We would like the discussion to be informal, so there's no need to wait for us to call on you to respond. In fact, we encourage you to respond directly to the comments other people make. If you don't understand a question, please let us know. We are here to ask questions, listen, and make sure everyone has a chance to share. If the group seems to be stuck on a topic, we may interrupt you and if you aren't saying much, we may call on you directly. If we do this, please don't feel bad about it; it's just our way of making sure we obtain everyone's perspective is included.

We do ask that we all keep each other's identities, participation and remarks private. We hope you'll feel free to speak openly and honestly.

We will be cloud recording the discussion and transcript, because we don't want to miss any of your comments. Your name will not be connected with your comments. No one besides the project staff and researchers will have access to these tapes.

What is the purpose of this group?
This discussion will help us to find the most pressing health needs and concerns of Barry County residents. Information from these focus groups will be combined with other health statistics and information to better describe health needs and concerns of all residents. Our goal is to work together as the health department, hospital system, and community organizations to improve health, and asking people directly what they think and have experienced in the community is a key part.

Leadership Focus Group Questions and Issues

1. What are the most pressing health needs or issues in your community?
    a. Is there anything currently being done to address these issues?
    b. How are the issues being addressed?

2. What are the top health outcomes you feel should be evaluated?

3. What is the current state of health care access in your community?
    a. Is there a wide variety/choice of primary health care providers?
    b. Is there a lack of insurance coverage for ancillary services, such as prescriptions, dental care or vision care?
    c. Is there an inability to afford out-of-pocket expenses, such as co-pays and deductibles?

d. Are there enough mental health services available?

4. How well are existing programs and services meeting the needs and demands the community?
    a. Why is that?
    b. What programs or services are lacking in the community?
    c. How could any of the existing services or programs be implemented better?

5. Are there any partnerships that could be developed or expanded to better meet community needs?
    a. What would be the partnership?
    b. How could it be expanded?

6. Are there any barriers or obstacles to health care programs/services in your community?
    a. What are they? Things like language or cultural barriers, technology barriers, travel/transportation etc.
    b. Do you feel any of the barriers have been addressed recently, or are the same barriers still present?

7. Do you feel relevant stakeholders or community residents are involved in planning and decision making?
        i. Why or why not?

8. What health related resources currently exist in your community beyond programs/services just discussed?
    a. What are any resource limitations, if any?

9. Since the last Community Health Needs Assessment was conducted and then published in 2020, what has been done locally to address the significant needs found?
    a. Health Care Access, Mental Health, Substance Use Disorder, Obesity
    b. Do you feel the strategies are working or having an impact? How can they be improved?

10. How has COVID-19 impacted health in the Barry County community?
    a. Are there any positive changes made during the pandemic you would like to see maintained?
    b. Has COVID-19 exposed any additional barriers or shown any additional challenges that you weren't aware of prior to the pandemic?

11. Do you have any additional comments on any issues regarding health or health care in your community that we haven't discussed so far? Or any other important information you think we should know?

END OF REPORT